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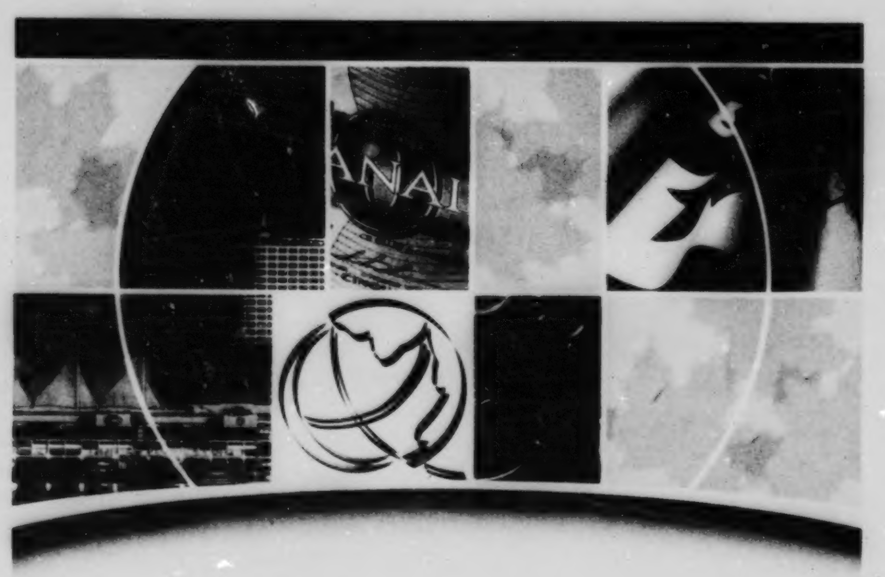

Trade Policy Research 2002

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Editors

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Part I:

The New Round of Multilateral Trade Negotiations: The Context at the Starting Point

Foreword and Acknowledgements

This volume brings together the results of some of the trade-related research and analysis undertaken within and on behalf of the Department of Foreign Affairs and International Trade over the past year. It builds on the research base established by *Trade Policy Research 2001*, taking up several of the major themes broached in the various contributions to that earlier volume, in particular trade in services. At the same time, there is a major difference: whereas last year the emphasis was on sorting out the reasons for the failed WTO Ministerial Meeting in Seattle in November/December 1999, this year the emphasis is on understanding what changed to permit the successful launch of a new round of multilateral trade negotiations at the WTO Ministerial in Doha, Qatar, in November 2001, and what might be said about the prospects for the new round, the ninth since the inception of the GATT in 1947.

An important contribution of rigorous research is to sharpen the public debate on the key issues of our times. No issue is currently of more pervasive relevance to Canadians than globalization. And no issue is today subject to more extreme rhetoric—rhetoric that sheds far more heat than light on the subject that it purportedly discusses. Trade and investment are not all there is to globalization but obviously are two of its most important and visible engines. Improving general understanding of the case for trade, and more precisely the case for further trade liberalization, is therefore an important contribution to the democratic process of informed debate.

With Canada now fully engaged in a new round of multilateral negotiations, participating actively in the on-going work towards a broader regional free trade area within the Americas, and working to strengthen bilateral trade and investment relationships with particular trading partners, Canada has taken a strong pro-trade stance. It is worthwhile to recall that, at one time and in a rather more optimistic age, what we are now trying to achieve was taken for granted as the norm. In this regard, it is worthwhile to again return to John Maynard

Keynes (1883-1946) and his famous description of the globalized economy of the early 20th century, which came to an abrupt end when WWI broke out in 1914. He picked out the following features:

- Life was hard for the average person but, for those with talent and ambition, escape was possible into the middle and upper classes for whom life offered, "at a low cost and with the least trouble, conveniences, comforts, and amenities beyond the compass of the richest and most powerful monarchs of other ages."
- "The inhabitant of London could order by telephone, sipping his morning tea in bed, the various products of the whole earth, in such quantity as he might see fit, and reasonably expect their early delivery upon his doorstep."
- "He could at the same moment and by the same means adventure his wealth in the natural resources and new enterprises of any quarter of the world, and share, without exertion or even trouble, in their prospective fruits and advantages."
- "He could secure forthwith, if he wished it, cheap and comfortable means of transit to any country or climate without passport or other formality."
- "He could then proceed abroad to foreign quarters, without knowledge of their religion, language, or customs, bearing coined wealth upon his person, and would consider himself greatly aggrieved and much surprised at the least interference."
- "But, most important of all, he regarded this state of affairs as normal, certain, and permanent, except in the direction of further improvement, and any deviation from it as aberrant, scandalous, and avoidable."

The essence of this description is economic freedom. The freedom to buy, to sell, to invest, to travel without papers. Economic freedom was based solely on coined wealth, which hard work and ambition could achieve.

The world had its dark side back then to be sure—imperialism, colonialism and social problems that would motivate a century of activism and progressive policy making.

But this world was destroyed by the intervention of a long list of other "–isms" that were much worse: militarism, fascism, communism, totalitarianism; and, in the economic sphere, protectionism. These produced two world wars and a global depression in between.

Several generations of statesmen, diplomats and technocrats, Keynes amongst them, set out to rebuild that world that was lost in 1914. They started at Bretton Woods where the first draft of the international economic architecture was laid out, continued in San Francisco creating the United Nations, and moved ahead in Geneva through eight rounds of trade negotiations to restore the freedom to buy and sell and to invest around the world.

The United States, which had suffered the deepest depression due to loss of economic freedoms, became their strongest champion. The Europeans, who had suffered most from militarism, became the strongest champions of the borderless world, a version of which they have created in Europe. Europeans restored their freedom to move about and work where they choose within their political and economic union.

Now, even before full restoration is completed, these basic economic freedoms are again under assail from new "–isms": terrorism and anti-globalism.

We have not done a good job of teaching our children history. Many of them have grown up believing that the restoration of the state of economic freedom that a citizen of the Edwardian age would have considered normal, certain, and permanent was nothing more than a corporate conspiracy to maximize profits. And we have risen to the bait set by anti-globalists by trying to defend the abstraction they attack. We would do well to remind ourselves that we are still simply working to restore the concrete economic freedoms that Keynes so elegantly described. This the man in the street can relate to.

We hope to make a small contribution to this better understanding through the papers compiled in this volume. And, in the process, we continue to work in the spirit of the broader commitment of the Government of Canada to stimulate the development of research capacity within its various departments. Accordingly, the papers are written in the personal capacity of the authors and do not represent the views of the Government of Canada or its Departments. At the same time, continuing the pattern set in *Trade Policy Research 2001*, the present volume also has several chapters devoted to the work of leading academic researchers. This combination helps maintain and indeed strengthen the bridge that must exist between the world of academia and the world of public policy.

Particular credit for stimulating and leading this effort is due to John M. Curtis, Senior Advisor and Co-ordinator, Trade and Economic Policy, at the Department of Foreign Affairs and International Trade (DFAIT). John again leveraged this output from a shoestring base budget.

Also deserving particular recognition are the contributors to this volume: Daniel Drache of the Robarts Centre at York University, Sylvia Ostry of the Munk Centre at the University of Toronto, Brian Copeland of the University of British Columbia, Ziqui Chen and Lawrence Schembri of Carleton University, and DFAIT economist Shenjie Chen.

And finally, particular credit goes go DFAIT's Dan Ciuriak for undertaking much of the editorial heavy lifting in pulling together a disparate group of papers, including some of his own work, into what this volume has become.

Leonard J. Edwards
Deputy Minister for Trade
Department of Foreign Affairs and International Trade

From Doha to Kananaskis: The Future of the World Trading System and the Crisis of Governance[*]

Daniel Drache and Sylvia Ostry

Perhaps the most important outcome of the fourth Ministerial Meeting of the World Trade Organization (WTO), which took place at Doha, Qatar, in November 2001, was that it did not fail; it achieved its stated goal, the launching of a new round of multilateral trade negotiations.

Whilst this may sound like damning with faint praise, the launch was, in the context, not insignificant since the ministers gathered at Doha bore a burden that transcended their portfolios. The shadow of what many have termed the "debacle at Seattle", where the third WTO Ministerial Meeting in

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[*] This chapter highlights some of the main themes that emerged from the discussions at the conference "From Doha to Kananaskis: The Future of the World Trading System and the Crisis of Governance", Toronto, March 1-3, 2002. The conference was jointly organized by the Robarts Centre for Canadian Studies at York University and the Munk Centre for International Studies at the University of Toronto, with support from the Department of Foreign Affairs and International Trade. As these discussions were held under Chatham House rules, there is no attribution of statements to individual participants. In any event, the choice and elaboration of themes from an event such as this – a three-day conference involving academics, government officials and members of civil society that elicited a spirited debate on every issue raised – necessarily reflects the editorial judgement of those holding the pen. Responsibility for the text thus rests with the authors; the views expressed here are not to be attributed to the organizing institutions or to the Department of Foreign Affairs and International Trade. Papers from the conference are available online at www.robarts.yorku.ca. Daniel Drache is Director of the Robarts Centre, York University; Sylvia Ostry is Distinguished Research Fellow at the Munk Centre, University of Toronto. The assistance of Dan Ciuriak, Senior Economic Advisor, Trade and Economic Policy and Trade Litigation, Department of Foreign Affairs and International Trade, in developing the text is gratefully acknowledged.

November/December 1999 collapsed amidst divisiveness, dissent, and disorganization, was still not dispelled as the Doha meetings approached. The steady escalation of violence at the venues of international conferences[1] was giving rise to a sense of a growing crisis of global governance. And the destruction on September 11th 2001 of the World Trade Center was being interpreted symbolically by some as an attack on globalization itself. In this context, the cliché that "failure was not an option" gained fresh life.

By the same token, interpreting the success at Doha from the narrower perspective of its implications for the global trading system and the system of global governance is all the more difficult. To what extent did geopolitical necessity and drafting sophistry simply paper over substantive divides amongst the developed countries, between the developed countries and the developing countries, and perhaps even amongst the developing countries? Moreover, to what extent can it be said that the tempered atmosphere at Doha represented conciliation between governments and civil society, versus the "death of dissent" (or more ominously, as some put it, its criminalization) following September 11th—or simply the deliberately chosen isolation of the venue? And in substantive terms, to what extent did Doha address the issues surrounding the growing reach of WTO rules into domestic governance and the still unrequited desire of civil society for a role in trade negotiations, trade disputes and trade policy more generally?

The discussions at the conference from which this chapter draws its title as well as its substance shed much light on these issues. To bring out what was learned as concisely and cogently as possible, we focus first on the discussion of what happened at Doha, why it happened, and what challenges it poses for governments, for those in the business sector, those in environmental, social and other NGOs, and analysts in academia and research institutions. We then briefly consider the next steps in the ongoing process of coming to grips with global governance issues, including the G7/8 conference to be hosted by Canada at Kananaskis in mid-2002. The main part of the paper then focuses on the major themes that were addressed at the conference and that will be dealt with in the multilateral round of trade negotiations launched at Doha, as well as in the upcoming summits and Ministerial meetings.

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[1] This escalation was set in sharp relief by the first death of a demonstrator at Genoa, July 2001, while the G7/8 meetings were being held.

What Happened at Qatar?

There was much background activity before and during the intensive four days of meetings in Doha—theatre some might say—in the effort to make and characterize the deals that would permit a consensus to be forged: many meetings, much travel and a great deal of political will by all ministers involved. How was the deal forged and what is the nature of the expanded negotiations (outlined in the box below) set in motion at Doha?

The major elements of the Doha Round in brief

General: embedding development issues at the heart of WTO negotiations, including implementation issues, technical assistance and capacity building.

Non-agricultural products: improved market access, with agreement on modalities on tariffs and non-tariff measures (to the extent possible) targeted for end-March 2003.

Agriculture: modalities for further commitments on the three pillars of the Agreement on Agriculture (domestic support, disciplines on export subsidies, and market access) to be established by end-March, 2003.

Services: a firm timetable has been set for services negotiations with tabling of initial requests by end-June, 2002, and initial offers by end-March, 2003.

Trade-Related Intellectual Property: over and above the political declaration on TRIPS and public health, negotiations will be held on a limited number of technical issues (in particular on a wines and spirits registry).

Rules negotiations: negotiations are to address disciplines on subsidies, antidumping and countervailing duties, as well as regional trade agreements.

Systemic issues: improvements to the dispute settlement system, and consideration of the interaction between the WTO and the Multilateral Environmental Agreements (MEAs).

The first controversy that emerged after trade ministers declared success at Doha centred on whether: (a) a round had been launched (in the customary meaning of these words); (b) the decision represented a "rolling launch" with the real decisions having been put off until the fifth Ministerial Meeting to be held in Mexico late in 2003; or (c) what had been agreed to was better characterized as an agenda—which in large part would be a "development agenda".

The fact that all of these perspectives could legitimately be put forward was eloquent testimony to the subtlety of the drafting of the final communiqué. At the same time, the need for subtlety reflected the persistence of divisions on substantive and procedural matters between the WTO members present at the Doha meetings.

The Embedded Development Agenda

With developing countries constituting the vast majority of the WTO's 142 members at the time of the Doha meetings, with the major source for remaining gains from trade liberalization being in developing countries, and with developing countries as a group being least committed to proceeding with a new round at any cost, it was inevitable that development issues would be featured prominently in the Doha Declaration.

Many (but not all) developing countries remained convinced that the Uruguay Round had been a one-sided deal, involving commitments for major structural reforms on their part in return for market access that had not been forthcoming,[2] and that they were not enjoying the benefits from freer trade that had been predicted. At the same time, while many developing countries may have signed onto the agreement at Marrakech that concluded the Uruguay Round without fully appreciating what they were getting into, or realizing the value of the veto that they had thereby acquired, they were much better prepared this time around. And, equally importantly, they were prepared to exercise their new-found clout.[3]

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[2] As was pointed out, the timetable for implementation of the WTO's intellectual property rights regime was linked to the phasing out of the quotas on textiles and clothing, reflecting the nature of the trade-offs that had been struck in concluding the Uruguay Round.

By the same token, there was little question that the countries primarily in the *demandeur* position at Doha were the industrialized group. The question was whether the industrialized countries would be able to move far enough to keep the developing countries—who were, in the view of some, quite prepared to walk away from Doha without a launch—from doing just that.

As it turned out, there is scarcely a paragraph in the Doha Declaration that does not mention developing country market access, special and differential measures for implementation of WTO agreements, or technical assistance and capacity building.

Flexibility on TRIPS

The ice-breaker in generating movement towards the apparent consensus was, in the estimation of most, the willingness signalled early in the Doha process by the United States—but also by other countries including notably Switzerland and Canada—on the issue of access to essential medicines within the broader context of the WTO's Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS).

This issue was of deep concern to many developing countries and to large sections of the population in the developed countries. Economic analysis provides only qualified support for the technical framing of the TRIPS Agreement; in trade policy terms, the sharp movement towards harmonization and "one size fits all" regulatory structures embodied in this agreement is considered dubious by some observers. Moreover, the battle for the moral high ground on this issue was barely contested given: (a) the acknowledged lack of attention given by the world-wide pharmaceuticals industry to tropical diseases; (b) the highly publicized and apparently effective approaches that appeared to infringe the TRIPS regime taken in recent years by several WTO members to address the spread of HIV-AIDS; and (c) the resort on an urgent basis in late 2001 by some wealthy nations to compulsory licensing of anthrax drugs in the wake of the series of terrorist incidents involving this bacterium. Accordingly, the only question facing ministers at Doha was *how* to move.

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[3] As was observed, resistance to the idea of altering the consensus-based approach in the WTO reflected to a good extent the interest of developing countries in preserving their effective veto in the consensus-based format.

In the end, it was not entirely clear whether the question was answered or not. The ministerial declaration on TRIPS and Public Health was characterized as "political" in nature (as opposed to, for example, being described as having "legal" standing). But perhaps this did not matter; if in the course of a dispute the political declaration could be cited as grounds for invoking the flexibility in the TRIPS agreement, as developing countries stated upon emerging from the ministerial discussions, the distinction was moot. Moreover, there was the declared intent of the parties not to use the WTO's dispute settlement mechanism to deal with cases involving public health. This made the whole issue even less consequential. Accordingly, the "clarification" that the TRIPS agreement *already* provided flexibility to deal with public health emergencies might be interpreted as euphemistic language to describe a real retreat.

At the same time, some parties emerged from the meetings contending that, indeed, nothing really had changed. To the outside observer attempting to discern whether the latter position was face-saving bravado or hard-edged *realpolitik* judgement remained, despite the clarifications, clear as mud.

Anti-dumping

While the show of flexibility on TRIPS got the ball rolling at Doha, a significant boost to the momentum of the process was also provided when United States Trade Representative Robert Zoellick accepted anti-dumping and other elements of trade remedy law being put on the table—notwithstanding strong pressures, including letters advising against this move by a large number of U.S. Senators and Representatives.

Coming mid-way through the Doha meetings, this signal of flexibility was extremely helpful in bringing developing countries on side, reflecting the extent to which anti-dumping actions tend to be aimed at them—and in light of the pressure on the U.S. administration for safeguards action in areas such as steel and lumber, as recession and a highly valued U.S. dollar combined to squeeze U.S. commodity producers.

Singapore Issues: negotiations definitely or only maybe?

A further important "deal maker" was the European Union's show of flexibility on the so-called "Singapore Issues"—investment, competition policy, transparency in government procurement and trade facilitation.

The European Union's insistence on inclusion of these issues in the forthcoming multilateral trade negotiations is a matter of curiosity to many observers, there being little obvious political pressure within Europe on these issues (with the possible exception of competition policy).

At the same time, many developing countries are decidedly set against inclusion of these issues, preferring instead to deal with an agenda focussed on traditional trade matters—most importantly improved market access.

Refined drafting came into play to help resolve the apparent impasse. At Doha, it was agreed that these issues would be studied in working groups, with a decision to be taken at the fifth Ministerial Meeting in Mexico in 2003 as to how to proceed. The question was: would negotiations on these issues automatically be launched at the fifth Ministerial with only modalities to be decided? Or would the decision whether to negotiate also be taken with finality at that Ministerial? The language of the communiqué skilfully glossed over this important difference, allowing different parties to offer varying interpretations following the Doha meeting.

Agreement on language on agricultural trade reform represented a final key area in bridging differences, in particular on two issues that were especially contentious.

First, there was the question of linkage between agriculture and environmental issues. Agreement to separate these issues was a major concession by the European Union, which greatly facilitated the achievement of consensus.

Second, there was the question of how to characterize the strengthening of WTO disciplines on export subsidies in agriculture. It had been agreed coming into Doha that negotiations would involve reductions in export subsidies. The question was whether the eventual end point would be acknowledged to be zero export subsidies, or whether the negotiations would proceed "with a view to" eventual elimination. In the minds of the drafters at least, the distinction carried code language significance.

The multilateralists supported as a matter of course

There remains to mention one group of countries that played a role, apart from the United States, the European Union and the large and heterogeneous group of developing countries. This group might be described as the confirmed multilateralists—countries that tend to see a strong multilateral trade framework as strongly in their interests, over and above the commercial benefits that might flow from a negotiated reduction of trade barriers. These countries include the medium-sized, trade-oriented industrialized members of the OECD, including Canada, that are not part of the European Union.

The domestic and international dynamics were quite different for this group than they were in 1986 when the Uruguay Round negotiations were launched. In good measure, this reflected the way in which the context for trade negotiations had changed. With trade barriers substantially reduced and with trade negotiations taking more time to deal with issues than is tolerable for commercially important business matters, getting the business sector to pay attention to multilateral issues in the lead-up to Doha was substantially more difficult.[4] At the same time, new parties within each society were clamouring for greater input into the development of positions for trade negotiations, into the conduct of the negotiations, and into the trade policy agenda more generally. Thus, not only did many of these countries have to conduct a broad-based consultative exercise pre-Doha, some delegations at Doha included representatives of civil society and others. Moreover, during the course of the discussions leading up to and at the Doha meetings, it became abundantly clear that, to sweeten the deal for the developing countries (and especially the least developed), the WTO's richer members would be expected to deliver—and not just trade-related technical assistance but also market access in textiles and clothing and agriculture.

While these richer multilaterally-oriented countries faced a far more complex calculation of how and why they would stand to benefit from a new round than had been the case in previous launches, and with a pledging session for expanded development assistance looming, they behaved in line with expectations as to how confirmed multilateralists would behave.

What is on tap for Kananaskis

Apart from their usual focus on short-term economic growth prospects, meetings of the Group of Seven/Group of Eight (G7/8) also tend to address topical political and economic issues confronting the global community, including multilateral trade issues and systemic issues of international governance.

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[4] For Canada, in particular, this was an important development because the Free Trade Agreement (FTA) and its successor, the North American Free Trade Agreement (NAFTA), had largely dealt with the most pressing issues for Canada's business community, namely more secure access to the U.S. market. From a commercial perspective, the main area of interest in the multilateral trade negotiations context was therefore agriculture with Canada joining other like-minded nations in the so-called "Cairns Group", seeking to improve market access and to strengthen disciplines on export subsidies.

While the WTO and the G7/8 are both important for global governance, the contrasts between them could not be greater.

- Whereas the WTO's institutional power derives from its influence over world trade, the G7/8's economic clout comes from influence over global finance, exercised in good measure through its executing agencies, the IMF and the World Bank, both essentially shareholder-run institutions, as well as other instruments of international finance.
- Whereas the WTO is in some ways a rough equivalent to a global town-hall meeting, in which at least those with some economic clout and vested interest have a voice and an equal vote, the G7/8 is the board meeting of the local bank, both exclusive and with no pretence to the principle of one voice, one vote—the Chairman of the Board wields disproportionate influence.
- Whereas the WTO says comparatively little in a positive regulatory sense about the nature of domestic economic management (if already too much in the estimation of some) while providing a well-articulated system of global governance for its area of competence, trade in goods and services, the G7/8 is almost the direct opposite: it tends to support a particular prescription for achieving good economic performance at home[5] while refraining from engaging in what might be seen as direct management of the global economy, leaving that in effect to the market.

If the WTO provides the legal-technical infrastructure for managing global commerce, as some would argue, the G7/8 might be said to provide the "cabinet" meetings of the system of global economic governance.

Against this background, the agenda for Kananaskis has two major issues planned in addition to the routine consideration of global economic growth prospects: fighting terrorism and a G7/8 Africa Action Plan which is to build and expand on the New Partnership for Africa's Development (NEPAD) unveiled at the 2001 G7/8 summit in Genoa.

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[5] As discussed below, the main elements of this come from the so-called "Washington Consensus" as updated by the G-20's "Montreal Consensus".

More fundamentally, Kananaskis is cast as being about "mainstreaming" governance, both domestic and international. The G7/8 "take" on governance starts with the empirically-based premises that:

- economic growth is key to reducing poverty;
- prudent monetary and fiscal policies and market-friendly reforms are associated with better economic growth;
- open markets for goods and services as well as foreign investment and access to international capital markets constitute essential features of growing economies; and
- investments in education and health care and the creation of adequate social safety nets are needed to provide the basis for equitable sharing of the benefits of growth (and thus to promote political stability and sustainability of reforms).

More recently, attention has been focused on the institutional frameworks that facilitate transactions in a private, contract-based exchange economy—the rule of law and enforcement of contracts, sound economic regulation (especially of financial institutions and markets), and transparent and accountable public management (i.e., absence of corruption) that instils confidence in local and potential foreign investors alike.

The substantive content of this prescription, which may be termed the Washington/Montreal Consensus, is married with procedural elements modelled on those in the NEPAD which emphasize ownership of the policy reforms by the country involved. "Coherence" in this framework means that the various international institutions providing financial or technical support to the developing countries co-ordinate their policies with respect to each client economy:

- the IMF in providing macroeconomic advice and assistance;
- the World Bank through its Country Assistance Strategies;
- UNCTAD/UNDP in supporting domestic adjustment; and
- the WTO in providing trade-related technical assistance to help developing countries exercise the rights and meet the obligations of WTO membership.

The intent is that the international institutions have on offer an internally consistent set of policies that prepare developing countries, and especially the least developed, to meet the domestic and external challenges of development. Coupled with debt relief and inflows of official development assistance, this would pave the way for expanded inflows of private sector capital to sustain growth and economic development.[6]

Complementing this "supranational" governance framework are the so-called "transgovernmental" forums—networks of agencies or regulatory authorities of sovereign governments that form to address particular issues confronting the global community.[7] An advantage of addressing issues in such forums as opposed to international institutions such as the IMF or the World Bank is that the issues are dealt with by representatives of sovereign nations who are likely to be more sensitive to issues of national interest, attenuating therefore charges that responses are being developed by institutionally–driven, unaccountable international bureaucrats.

While it is clear that major efforts are being made to respond to the criticisms that have been levelled at the approach to global governance, it is substantive success that ultimately confers legitimacy. The fact that there continues to be a sense of crisis concerning global governance thus can be traced to the lack of obvious results from the plethora of action plans, agendas and programs promulgated over the years. In this circumstance, the finger of blame gets pointed everywhere—at the developing countries themselves for failing to implement, at the developed countries for inadequate support (including in terms of market access), and at the policy prescription itself.

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[6] One currently favoured vehicle to give effect to this approach is the Poverty Reduction Strategy Paper (PRSP) process. PRSPs are conceived as "blueprints" for development and poverty reduction in the least developed countries, as well as being mechanisms for coordinating donor development assistance. These blueprints join the alphabet soup of other strategies/initiatives/programs to deal with poverty, debt and development, including the World Bank Country Assistance Strategies (CAS), the IMF's Extended Structural Facility (ESF) programs, the Heavily Indebted Poor Country (HIPC) initiative and as many others as there are agencies or international meetings on the issues.

[7] One example of a transgovernmental forum is the Group of 20 (G-20), which brings together the Finance Ministers of systemically important countries. The G-20 was formed in the wake of the Asian Crisis to identify policies required to avoid the build-up of financial fragility and to create mechanisms to facilitate working out problems when they do arise. Other examples include the Basle Committee on Banking Supervision that was formed by the Central Bank Governors from the Group of Ten, and the International Organization of Securities Commissions (IOSCO). For a discussion of the role of transgovernmental forums in the system of global governance, see Anne-Marie Slaughter, "Governing the Global Economy through Government Networks" in Michael Byers (Ed.) *The Role of Law in International Politics: Essays in International Relations and International Law* (Oxford: Oxford University Press, 2000).

In this latter regard, it is hard to miss the circularity in the prescription presently on offer: in order to develop, a country must first put in place the institutional framework of an advanced economy. The reason that global governance policy has reached this point is straightforward: while the model is clear—the vibrant, resilient economy of the United States of America—there is no real understanding of "how to get there from here", where the initial conditions of "here" are often those of a destitute, failed or geographically isolated economy.[8]

The road map of major global governance meetings in 2002

Monterrey, Mexico (18-22 March 2002): a UN conference on *Financing for Development* will consider a draft "Monterrey Consensus" which holds that sustainable development must involve a compact between donor and recipient: donors undertake to mobilize Official Development Assistance and other resource flows and to free domestic resources through debt relief; recipients, meanwhile, commit to "country ownership" of the reforms and "staying the course" on agreed development priorities.

Kananaskis, Canada (26-27 June 2002): in addition to considering economic growth and the struggle against terrorism, G7/8 leaders and finance ministers will consider an Action Plan for Africa.

Johannesburg, South Africa (26 August-4 September 2002): Environment ministers will address questions of sustainable development at the "Rio plus Ten" World Summit on Sustainable Development.

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[8] In this regard, it is apposite to note that the United States reached its current position with a historical institutional framework that only gradually evolved into its current form).

Development

While governments in the industrialized countries jumped on the technical assistance/capacity building bandwagon at Doha to get developing countries onside for a launch, they now face the daunting task, as many have noted, of delivering this in sufficient quantity and quality to have a significant impact by the time of the fifth Ministerial when the outlines of the Doha Round are to be finally decided. The questions are twofold: can support on the scale that is needed to make a difference actually be mobilized, and how to avoid raising excessive expectations regarding what is feasible in terms of end results—which is not an inconsequential issue insofar as the assistance envisaged is intended, in part, to provide the developing countries most in need thereof with the capacity to negotiate effectively in the *course of* the Doha Round. The outcome will hinge, in the view of some, not so much on the availability of money[9] as on substantive delivery—the technical assistance and capacity building that is being discussed may go well beyond what the WTO Secretariat and other international agencies have been providing.[10]

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[9] On March 11, 2002, in Geneva, a total of over 30 million Swiss francs (double the initial target) was pledged to what is known as the WTO Trust Fund for Doha-related technical assistance and capacity building.

[10] It is not entirely clear that everyone has the same understanding as to the meaning of the trade-related technical assistance (TRTA) and the broader notion of capacity building that have been widely promised. These terms certainly include advice and training for developing country officials on the interpretation of the WTO agreements of the sort that is routinely provided by the WTO Secretariat (although the WTO has limited capacity of its own to expand this to any great extent). In addition, there is technical assistance in implementing the agreements, which can include for example help in drafting or adapting statutes or regulations (e.g., to implement the TRIPS Agreement) and training for officials in administering these regulations. This type of activity would be more in the province of the World Bank through programs under the Integrated Framework. Some developing

However, for the developing countries that have bought into the program of trade-led development, the key issue is market access. From this perspective, it was argued, the complex agenda that emerged from Doha is taking the WTO away from trade; it needs to get back to this issue front and centre, if the Doha Round is to be a development round as advertised.

The European Union helped build momentum on market access in the period leading up to the Doha meetings with its "Everything But Arms" initiative, which promised quota and duty free access to all developing country products (although, as some have put it, to many developing countries the initiative would have better been titled "Everything but Farms" since the European Union's farm support programs, including its agricultural export subsidies, were not included).

The United States, for its part, greatly facilitated a launch by moving, as noted above, on some of the major elements of concern to developing countries: showing flexibility on TRIPS against the urging of various domestic interests, including notably the pharmaceutical industry, and taking a chance on opening up negotiations on anti-dumping in the round. At the same time, there was no evident thaw on textiles and clothing, one of the key market access issues.

The dynamic observed at the Doha meetings, with the industrialized countries emphasizing technical assistance and capacity building and the most trade-oriented developing countries emphasizing market opening, poses an important question about how the Doha Round is to be concluded. As was observed, after a good number of years of experience in the WTO, developing countries now "have the trade textbook" and are cognizant of the significance of their vote in a consensus

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countries would interpret the meaning of capacity building even more broadly to include the development of physical infrastructure to support trade (e.g., ports facilities etc.). Within the civil society, on the other hand, the term capacity building would be held to include support for developing participatory mechanisms to increase the democratic legitimacy of developing country participation in negotiations.

setting.[11] Many of these countries are less interested in "putting development into trade" (which is code language for relaxing WTO implementation requirements for developing countries), and would prefer to take at face value the rhetoric of "putting trade into development", which means more trade through significantly improved market access. Can the industrialized countries deliver?

Finally, there is a large unknown due to the entry into the WTO of China in late 2001. As one of the world's largest trading nations, with interests that to some extent coincide with more general developing country interests (although in some ways not), and with geopolitical clout unmatched elsewhere outside the OECD, China's role in the conduct of the Doha Round remains unclear but potentially of high significance.

TRIPS

In many ways, the pitched intellectual battle that rages about the TRIPS Agreement is at the heart of the debate about global governance more generally in terms of (a) the intrusiveness of international rules into domestic policy space, (b) the pressure for international harmonization, and (c) the implications for democratic processes when rules with domestic distributional consequences are adopted on the basis of, or shaped by, international agreements. It is therefore useful to focus on this particular issue in somewhat greater detail.

There are several general features of the TRIPS Agreement that have put it in the line of fire in terms of governance:

First, the economic literature shows that patent protection as a means of eliciting research is not unambiguously an optimal approach since it gives effect to its purpose by bestowing market power in the form of a temporary monopoly on those holding patents. It is a well-known result of both economic theory and empirical research that monopolies result in economic inefficiencies (e.g., higher prices and reduced output) compared to competitive markets. Accordingly, to justify bestowing market power on particular firms requires not only a good reason for doing so (in this case stimulating additional research and development) but also the absence of a better alternative instrument (e.g., using subsidies or tax incentives to stimulate research).

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[11] Moreover, there is now a flood of advice on offer to developing countries from non-official sources (some civil society organizations have been described as constituting a "virtual secretariat" for developing countries) as well as from the official agencies. While some would question how effective or even desired is the support proffered by civil society organizations, others see such organizations as providing analytical support that strengthens the ability of the developing countries to choose effective strategies and to maximize their negotiating leverage.

In a world where governments typically face fiscal pressures, the market distortions resulting from patent protection tend to be seen as the lesser evil.[12] Nonetheless, this still leaves patent protection subject to an empirical test of whether the dynamic gains to society from research and development that is stimulated by the prospect of obtaining a legal monopoly for an extended period (20 years in the case of TRIPS) outweighs the static costs (which include the costs of implementing a regulatory structure to administer the grant and enforcement of the monopoly regime, insofar as the latter are not fully defrayed by user fees).

Given the complex considerations, in order to achieve optimal outcomes, nations must carefully calibrate the length of time for which the ability to obtain monopoly rents is conferred, balancing the potential gains in terms of greater incentives for research against the costs. Since there is no reason to expect that a balance that works for one industry in one country (e.g., health-related products in the United States) will be equally appropriate for other industries or other countries (e.g., food-related products in large population developing countries such as India or China), the deployment of this technique in an internationally standard manner is problematic on *a priori* grounds.[13]

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[12] As was pointed out at the conference, the distortions include as well those due to the use of patents to block innovation by others.

Second, it has been argued that TRIPS was implemented without the type of understanding of its consequential effects that would be desirable in a public policy process. For example, critics now point to the fact that the availability of monopoly rents for certain approaches to problems (e.g., patentable drugs in the case of health problems) distorts the direction of research away from techniques that do not lead to patents, introducing spillover distortions into various areas of economic and social activity. As well, the ability to reap monopoly rents on research into diseases that afflict developed countries distorts research choices vis-à-vis diseases that afflict much larger number of people in the developing world where there is no effective demand to pay the monopoly rents. Doubts about over-emphasizing commercial approaches to research activity are also raised by the evidence of very good returns to non-commercial research and development in agriculture. Finally, there is the fact that sometimes patents are sought for traditional knowledge—i.e., in instances where there is no gain in research at all and the purpose of the patent is in effect to enclose an intellectual commons. Such considerations raise the question of what is a socially efficient research framework.

Third, like tariff changes, patent protection redistributes income. However, unlike tariffs cuts, which redistribute income amongst producers based on competitive grounds and more broadly from producers to consumers by reducing producer rents and enlarging consumer surplus, patent protection redistributes income from consumers to producers, enlarging producer rents and reducing consumer surplus. Accordingly, while the population at large (or at least consumer activists) may be willing to cut trade ministers considerable political economy slack for traditional trade policy, which has allowed the presentation of negotiated outcomes of trade rounds to national legislatures as untouchable *faits accomplis,* there is no such willingness to accommodate the negotiation of rules such as TRIPS.[14]

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[13] Notwithstanding this point, the Patent Harmonization Treaty, it was pointed out, is moving even faster in this same direction.

Fourth, there are various problematic aspects to the inclusion of TRIPS in a trade agreement including, *inter alia*, the internationally asymmetric outcomes from the TRIPS agreement (gains for developed countries and costs for developing countries); and regime inconsistency (private rights for genetic resources under TRIPS versus sovereign ownership of the same asserted by the Convention on Biodiversity).[15]

For all these reasons, the TRIPS Agreement represents a very dubious salient towards a regime for democratic global governance—and this is quite apart from the moral issues raised because of the threat of legal action against compulsory licensing of HIV-AIDS drugs by developing countries, which were put aside (at least to all appearances[16]) at Doha.

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[14] More generally, it was observed that, insofar as the attack on the WTO stems from the fact that it favours the private interest over the public interest, then something has seriously gone wrong, since the original GATT expressly suppressed private producer interests in favour of expanding the public interest, in particular by reducing producer rents and expanding consumer surplus!

[15] For a fuller discussion of the trade-offs and issues surrounding the TRIPS agreement see Keith E. Maskus, *Intellectual Property Rights in the Global Economy* (Washington DC: Institute for International Economics, 2000).

[16] The extent to which the declaration resolves the issue remains subject to debate. It was observed that, even though TRIPS may not be enforced through the WTO, the fact that most governments, most of the time, will adhere to their formal commitments means that TRIPS will be *de facto* enforced. Moreover, in terms of the scope of the flexibility built into the agreement, it was suggested that those providing technical assistance to developing countries tend to interpret this flexibility narrowly, further increasing the likelihood that it will be applied narrowly. That being said, it was also pointed out that the World Bank has been highlighting the flexibility in the agreement to its developing country clients in its publications. In the end, it may be up to the dispute settlement mechanism to establish what the international regime is in *de facto* terms, in particular with respect to the boundaries that will apply to the flexibility indicated in the political declaration (i.e., when is a health situation an emergency for purposes of TRIPS) and/or in areas where controversies have yet to surface.

At the same time, there is the *realpolitik* issue that the TRIPS Agreement poses: arguably, there would have been no Uruguay Round outcome without it, since it was a major factor in mobilizing U.S. private sector support for the round. The technical analysis of the agreement, or lack thereof, did not enter into the political equation.

As to the narrow question of the future of the TRIPS Agreement itself, it was argued that the array of interests that led to TRIPS being implemented remains to a good extent in play. Indeed, as was observed, at Doha, the TRIPS-related issue that was being actively discussed had to do with *expanding* it to include geographic indicators, with the *demandeurs* being not U.S. multinationals but developing countries seeking to create rents for themselves.[17] While this suggests that TRIPS may be generating new constituencies, which in turn would militate against its demise, some see it at risk of being weakened, unless market access on agriculture and textiles and clothing is forthcoming. At the same time, the fact that the United States is implementing intellectual property in its bilateral free trade agreements points to an alternative *de facto* global regime emerging from a patchwork quilt of bilateral and regional agreements.

Services

The major governance issue posed by trade in services under the GATS derives from the fact that this agreement applies international disciplines to domestic regulations and to services that are delivered by the public sector in some countries. These concerns may be articulated as follows.

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[17] It is more than a little alarming that the commentary on this issue has tended to emphasize that this shows that developing countries might indeed find benefits in TRIPS rather than pointing out the Pandora's Box of rent seeking which TRIPS has introduced into the bosom of the international trade regime, including in cases where redeeming benefits in terms of research and development are not even remotely at issue.

Insofar as services trade disciplines rule out regulations that are presently considered to be optimal, constrain movement to regulations that might be optimal in the future (through *de jure* or chilling effect), or prevent the trial and error experimentation that may be required to identify an optimal regulatory regime, their existence is problematic from a theoretical economic welfare perspective.[18] The generally poor state of knowledge concerning the impact of changing regulations in developed countries, and the complexities involved in understanding the effect of the GATS regime,[19] heightens concerns for many about entering into binding commitments; the far greater lack of knowledge about these issues in developing countries escalates these concerns when services trade disciplines are extended beyond the industrialized countries.

Meanwhile, introducing private sector service suppliers into areas where public sector supply has been the norm (sometimes in the form of public monopolies), while in theory welfare enhancing in economic efficiency terms due to de-monopolization, might result in trade-offs with non-efficiency-related public objectives that are not considered to be desirable in overall public policy terms.[20] While the GATS provides exclusions for government-provided services, how narrow or wide the exclusion is depends on interpretation (since many, if not most, government services involve an admixture of private supply, a narrow interpretation of the exclusions could give the GATS wide application).

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[18] One observation was that, in some areas, regulatory regimes develop on a "follow the leader" basis. California, for example, tends to play this role in environmental regulation while the U.S. Securities and Exchange Commission tends to play this role in securities regulation. Insofar as the bias within the WTO setting is against outliers in regulatory regimes, it would tend to "stop the leader", and thus tend to arrest regulatory development.

[19] The GATS applies disciplines in some cases to non-discriminatory measures as well as to discriminatory measures, complicating determination of what is and what is not subject to, or potentially subject to, an international trade in services discipline. In a similar vein, regulations that are nominally non-discriminatory may be subject to disciplines if their effect is more onerous on foreign services suppliers – a *de facto* test. Technical difficulties in interpreting certain drafting within the GATS that have been identified by the WTO secretariat add to this concern. Indeed, the inclusion of tests for regulations such as "not more burdensome than necessary" which have yet to be subjected to jurisprudence make this agreement, in the view of some, a "labyrinth of uncertain language".

Finally, it was argued, the fact that regulatory measures might be subject to dispute resolution could place the Dispute Settlement Body in the position of domestic regulatory oversight in areas that seem quite remote from trade (e.g., domestic water quality measurement, land-use planning and zoning restrictions[21]) and thus well beyond what would appear to be reasonable.

Since a good portion of the basic services provided by local governments might be potentially attractive to private sector service providers, and thus possibly to foreign service providers, the governance issues in these areas are, in the view of some, quite immediate. This concern is heightened by the tight three-year target for completion of the Doha Round negotiations (which in the view of some creates a false sense of necessity that militates against the thorough public policy scrutiny that such commitments require).

Countering these various apprehensions, and indeed in good measure *because* of these apprehensions, there are several features of the current WTO trade in services regime that mitigate concerns:

- the positive list approach in which commitments are made, coupled with the fact that governments, especially in the developing world, have been cautious about entering into commitments;

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[20] It was noted that, in one instance where water supply was privatized, an international dispute erupted when the foreign investor shut off the supply of water to those who could not pay.

[21] One example that was cited where a trade dispute could involve zoning regulations would be entry of a "big-box" retailer into a particular neighbourhood.

- the relaxed manner in which the Appellate Body has tended to interpret Article XX grounds for exceptions,[22] coupled with the Doha Declaration's affirmation of the right to regulate which strengthens the hand of the Appellate Body in upholding domestic regulation in politically sensitive cases; and
- the fact that retreat from commitments requires negotiations only with principal suppliers, not with the entire WTO membership.

With the trade in services regime still very young and having undergone little development, it remains difficult to foresee how serious the potential problems will turn out to be. Nonetheless, there are sufficient grounds to suspect that movement on services liberalization will be cautious (not least because well-developed sector-specific base cases such as provided by the Telecoms Reference Paper for that sector are lacking in other sectors) and that services disputes will be difficult for the WTO to manage.

Agriculture

Although there is widespread agreement that agriculture is the area in which trade liberalization stands to yield the greatest commercial or economic gains,[23] agriculture also remains probably the most difficult subject for trade policy. Little progress was made between the official launch of renewed multilateral negotiations in 2000 (as had been pre-committed in the conclusion of the Uruguay Round) and the Doha meetings, notwithstanding the fact that over 120 proposals had been put forward. This supports the view that broader trade-offs are essential for forward movement in this area.

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[22] Article XX of the GATT, entitled *General Exceptions*, provides that the Agreement shall not be construed to prevent the adoption or enforcement of measures related to a specific list of grounds, including for example protection of public morals, national cultural treasures or human, animal or plant health or life.

[23] For a review of the literature on this point, see Chapter 3 in this volume, John M. Curtis and Dan Ciuriak, "The Nuanced Case for the Doha Round".

From a governance perspective, the agricultural trade negotiations highlight several issues.

First, there is the central role in shaping the Doha outcome played by the European Union's insistence that its own internal reforms to the Common Agricultural Policy *not* be pre-judged in any way by the multilateral trade negotiations.[24] The tough negotiations and the sophisticated language used to present the outcome is indicative of the scope for multilateral rules to impinge on domestic rulemaking—and the result is indicative of the privileged position of the larger economies in determining the outcome of trade rounds.

Second, there is the complicated issue of "non-trade" concerns.

Third, there is the conflict between the commitment made by the industrialized countries to open up markets for developing country agricultural exports and the entrenched position of agricultural producers in domestic politics within the advanced countries.

Fourth, the pressure on family farm incomes is undermining support for trade liberalization in agriculture even in successful exporting countries. This may have less to do with trade liberalization *per se* than, as was argued at the conference, with the mergers and take-overs that have increased corporate concentration in various links in the agri-food production chain, including upstream equipment/input suppliers and downstream processors/ distributors.

Trade-related Issues

The intersections between trade and other policy issues that are affected by trade and/or in their turn impact on trade policy are the focus of much of the concern about trade policy and especially about further liberalization. The rules that are to govern traffic at these intersections remain to be clearly set out—are we talking about an overpass, an underpass, a four-way stop or a two-way stop? While public support for trade is broad (this is the case in Canada but also elsewhere), so is concern about how these intersections are regulated.

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[24] This was at the crux of the issue about the interpretation of the words "with a view to" elimination of export subsidies.

Resolving the interaction between the WTO agreements and the Multilateral Environmental Agreements (MEAs) is one important task that will be undertaken in the Doha Round.[25] However, for environmentalists, this is but the tip of a much larger iceberg of issues that remain to be adequately addressed.[26] And, in the view of some, the attitudes of environmentalists are hardening.

On trade and labour, the International Labour Organization has been pushed to increase its profile on international labour issues in order to relieve the pressure on the WTO. While trade and labour issues thus had little profile at Doha, it was suggested at the conference that the position of labour is also hardening.

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[25] MEAs are agreements between states which set out principles which parties are to respect when considering actions which affect a particular environmental issue ("soft law") or which specify legally-binding actions to be taken to work toward an environmental objective ("hard law"). The major MEAs are the Convention on Biological Diversity (CBD), the Framework Convention on Climate Change (FCCC), the Montreal Protocol on Substances that Deplete the Ozone Layer (Montreal Protocol), the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES), the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (Basel Convention), and the United Nations Convention on the Law of the Sea (UNCLOS). Some of the important "soft law" agreements include the Rio Declaration on Environment and Development, Agenda 21, and the Forest Principles.

[26] These include the larger questions concerning the environment and the economy such as failure to account for resource depletion in measures of economic output, the validity in broader public policy terms of economic theories that underpin trade (e.g., comparative advantage), and the issue of regulation of transnational corporations. This set of issues will get a hearing at the Rio-plus-ten meetings in Johannesburg, the third major leg of the 2002 global governance tour from Doha to Kananaskis to Johannesburg.

Conversely, for the corporate sector, Doha was much less interesting than Punta del Este, where the Uruguay Round was launched. Investment is not that big an issue any more, perhaps because the web of bilateral and regional agreements that contain provisions dealing with investment have effectively dealt with pressing issues. Similarly, the corporate sector has little concern about competition policy within the multilateral framework, provided only that the United States and the European Union can sort out their bilateral concerns.

The Competition from Regionalism

The ongoing activity towards deeper regional economic agreements remains a major issue for the multilateral system. The WTO's disciplines on regional agreements (Article XXIV, which requires most importantly that substantially all trade be covered by a preferential trade regime for it to be consistent with multilateral obligations) remain untested.[27] In good measure, it was suggested, this reflects the clouded meaning of Article XXIV: does it cover substantially all of existing trade (which may be quite small) or substantially all potential trade (which might be much broader).

Concern about regional trade agreements has generally been muted because of the general consensus that, on balance, the trade that they create exceeds, often substantially, the trade that they divert. On the other hand, the deepening of trading blocs weakens the apparent significance of the multilateral system to those who actually take part in trade—businesses—even though multilateral liberalization is vital in minimizing the distortionary effects of regional pacts by squeezing the available margin of preference that they can provide.

Moreover, for developing countries, the jury must remain out on whether regional pacts help or hinder. East Asia, which is the region that has done best in integrating into the global economy through trade, is conspicuous in terms of having far fewer regional trade agreements than Latin America or Africa (which curiously has the most).

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[27] Many regional trade arrangements have been notified to the WTO in accordance with obligations to which members are subject; however, to date, there has not been a single ruling concerning whether any particular trade arrangement is consistent with Article XXIV.

Nonetheless, there appears to be considerable interest in developing a bloc in East Asia (for reasons that may have more to do with the Asian Crisis than with trade policy *per se*). Meanwhile, in the Western Hemisphere, the Free Trade of the Americas process is due to conclude at the same time as the Doha Round, in 2005, setting up a horse race of no small consequence for the role of the multilateral system in "delivering the goods" on trade.

The WTO as an Institution of Global Governance

One important strand in the controversial weave of global governance today is the role of supranational institutions.

In the view of some, the WTO is a member-driven organization through which duly constituted governments voluntarily enter into binding international commitments for mutual gain. The WTO is kept deliberately small in order to ensure that a strong role is played in national capitals.

In the view of others, the idea of the WTO as a member-driven consensus organization is a fiction; some who cleave to this view see the WTO as constituting yet another supranational institution with an unelected bureaucracy that wields considerable influence over public policy in many countries through its control over inside information (as reflected by the lack of "external transparency" in WTO affairs), its proactive role in interpreting the agreements,[28] its advocacy of liberalization and most importantly through the judicial power of the dispute settlement mechanism. This independent power is to some extent negated by the fact that the WTO is a leaky organization (attributed by some to the presence of reasonable people on the inside) and can be pushed back by members.[29] Nonetheless, as was argued, since the WTO does not derive its power formally, it is difficult for this power to be transparently subjected to discipline. It was also observed that, in India, the WTO is paid far more attention than is accorded the IMF or the World Bank.

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[28] Developing countries, which tend to be on the receiving end of WTO Secretariat advice and assistance, face some difficulties in this regard. While they may be suspicious of the interpretations of the agreements offered by WTO insiders because the institution's advocacy has called its objectivity into question, it remains difficult to know what advice one should then trust.

Many of those who see the WTO as inordinately weak argue that it should be strengthened, armed with larger budgets and more personnel, and granted greater executive powers to deal with, at a minimum, lower-level administrative decisions and technical interpretations. Conversely, those who see the WTO as too powerful would like to see its influence cut back to increase its democratic legitimacy. It is not clear that there is a feasible middle ground.

While the WTO of presently 144 members is a radically different organization than the original GATT of 23, its decision-making architecture has not changed. Nor is it likely to change any time soon because the consensus format is a major source of power within the institution for the smaller members. Equally importantly, institutional reform of the WTO is not a high priority for the United States.

The WTO thus remains without a management committee. As well, it lacks a policy forum in which to debate divisive issues, something which it did have prior to the disbandment of the Consultative Group of 18 (CG18). Finally, a way to meet the developing countries' concern about not being fully part of the negotiating process has not yet been sorted out.

At the same time, the proposals put forward at Doha on "external transparency" were greeted with yawns, reflecting perhaps a perception that the anti-globalization demonstrations had passed their peak (a perception which many in civil society would argue is false). Moreover, there is no clear response to the concerns that are being raised by the intrusive nature of WTO rules in the services sector (where trade disciplines have the potential to influence the substantive content of domestic regulation and possibly even to result in WTO dispute resolution panels making rulings on substantive domestic regulation, for which many would argue WTO panels have neither the requisite expertise nor, more fundamentally, the legitimacy). A resolution to the broader question of democratic legitimacy that exercises the civil society movement is thus also not yet in sight.

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[29] The Dispute Settlement Body (DSB) was indeed forced to disinvite *amicus curiae* briefs in the course of a dispute when members called a special session of the General Council to protest what they saw as the DSB deciding an issue that members had left undecided in the Uruguay Round

Conclusions

A failure to launch a round at Doha would have been very damaging for global governance. There are alternative avenues that nation-states can take in addressing pressing trade-related problems—the WTO is not after all the only game in town. However, bilateralism and regionalism in the trade policy arena carry their own risks.

While the successful result at Doha was therefore of much importance, it is not clear how properly to characterize this success—a round or an agenda. Indeed, the Doha Declaration has no equal in terms of the skill with which it deployed "constructive ambiguity" to paper over fundamental divides. The work program, regardless of how characterized, will be decided at the fifth Ministerial Meeting of the WTO in Mexico in 2003. Accordingly, it is impossible at present to predict the outcome of the success at Doha.

Nonetheless, there is great significance in the symbolism that is invoked in the Doha Declaration (in particular, the persistent refrain of special and differential treatment for developing countries) and in the fact that the United States and the European Union conspicuously "wooed" Africa before and during the meetings. By contrast, the South played no great role at Punta del Este. The importance of development issues in the current work program cannot, therefore, be emphasized enough.

At the same time, delivery by the industrialized countries will not be easy: the areas where they would like the emphasis to be (technical assistance and capacity building) often involve long-term institutional change and results can be difficult to measure, while the areas which matter most to developed countries (market access on agriculture and textiles and clothing where developing countries face tariff walls that are often prohibitive) are where the economic adjustment and associated political pain in the industrialized world lies. Moreover, there remains a huge gap between the amount of Official Development Assistance that is needed to meet promises and the amount that has been identified.

From the perspective of governance issues *per se*, the future of the WTO appears to be troubled. The erosion of the buffer zone between domestic and international policy space that has been underway since at least the Uruguay Round (and to some extent the earlier Tokyo Round) is to be accelerated through the push for further services trade liberalization in the Doha Round. Whether the WTO, and especially the Dispute Settlement Mechanism, can cope with the added burdens is not clear. Moreover, it remains to be seen how the WTO will function as a negotiating body with a membership of 144 that now includes a wild card of unknown significance in the form of China.

Finally, there is the larger issue of international coherence, including not only the trading system but the international financial regime of exchange rates and capital flows. Insofar as this issue is on governments' radar screens, it is in terms of the institutional linkages and interactions involving the WTO and the Bretton Woods institutions. The substantive aspect (the impact on the trading system of over-shooting exchange rates and volatile capital flows), however, is not being dealt with—and indeed, has not been taken up since France voiced concerns about the interaction between exchange rates and the trading regime in the aptly named "FOGS" process (the acronym was for the formally constituted Uruguay Round Negotiating Group on the Functioning of the GATT System, which amongst other goals was to establish better links to the Bretton Woods institutions).

The global economy has changed. The need to change the approach to global economic governance seems apparent to all. Yet how to do it is contested as never before. It seems apt in these circumstances to recall the words of one Niccolo Machiavelli: "…there is nothing more difficult to arrange, more doubtful of success, and more dangerous to carry through than initiating change in a state's constitution."[30] The road from Doha to Kananaskis and beyond can well be expected to be bumpy.

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[30] Niccolo Machiavelli, *The Prince* (Penguin Books, 1973): p. 51.

The Role of Contextual Factors in the Launching of Trade Rounds

John M. Curtis[*]

Introduction

The broader economic and foreign policy context is often overlooked by those involved in trade policy. Today, much of the trade policy literature and policy discussion can be characterized as instrumental, legal-technical or procedural in nature. The focus tends to be, for example, on dispute settlement issues, the functioning of the WTO as an institution, or how to deal with the "built-in agenda" or the "Singapore issues".[1] Another stream of trade policy discussion concerns itself with the grassroots/business/political support (or lack thereof) for liberalization and/or how to deflect public pressures on the trade agenda coming from the anti-globalization camp, including by developing economic analysis of the likely impacts of trade liberalization. The result is a certain "inwardness" in the trade policy literature.

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[1] For the non-cognoscenti, the "built-in agenda" refers to the liberalization initiatives, including the launch of negotiations on agriculture and services at a set time, that were agreed as part of the Uruguay Round—in a sense, the unfinished business of that round. The "Singapore issues," meanwhile, refer to the so-called "new" trade policy issues such as competition policy and investment, the inclusion of which in the multilateral trade framework remains controversial and which accordingly remain in the limbo of the trade negotiation world—under study by a working group.

Perhaps as a reflection of this, comparatively little has been written to date about the role of contextual factors in explaining: (a) why trade liberalization happened in the first place; (b) when and at what pace it happened; and (c) why it took the form that it did. To shed light on these questions, this chapter examines the economic and political context in which trade rounds have been launched and negotiated.

The analysis in this chapter contrasts the early postwar rounds with the rather unique Dillon Round, which marked the beginning of a transition, and with the later "named" rounds—the Kennedy, Tokyo and Uruguay Rounds—which completed the transition to a more complicated management of international trade. Based on this review, the analysis attempts to shed light on why a round failed to emerge from the WTO Ministerial in Seattle in November/December 1999, and why one did emerge from Doha in November 2001.

The Early Rounds

To some extent, the inwardness of trade policy literature reflects the habits of minds fashioned by the way the early GATT rounds, listed in the panel below, unfolded.

Early GATT Rounds[2]	Dates
Geneva Round	April to October 1947
Annecy Round	April to August 1949
Torquay Round	September 1950 – April 1951
Geneva Round	1955-1956

As can be seen, these earlier rounds were launched in fairly rapid succession. There is little to indicate that they were driven by anything other than the interests and concerns of trade ministers pursuing their own particular mandates to roll back the highly destructive protectionism of the interwar era.[3] The tariff reductions negotiated in these rounds were accompanied by the dismantling of quantitative limits on imports and exports and various payments impediments that hampered international commerce. By the time the agreements arising from these four rounds were completed, the average weighted tariff in the major industrialized countries had fallen to about 15 percent.[4]

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[2] These rounds were not actually "named"; that practice began with the Dillon Round. Nonetheless, the first four rounds have come to be referred to by the name of the locale in which they were negotiated: Geneva, Annecy in the French Alps, and Torquay in the United Kingdom.

While the strength of the mandate given trade ministers in the early postwar years was founded on the reaction against the beggar-thy-neighbour protectionism of the interwar period, their work was greatly facilitated by the nature of the early postwar international institutional framework. It will be recalled that this was the era of the so-called "club" system, which Keohane and Nye have described as follows:

> "Beginning with the Bretton Woods conference of 1944, key regimes for governance have operated like 'clubs.'

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[3] It is important, however, to recall the Cold War origins of the GATT. As U.S. Trade Representative Robert Zoellick reminds in a recent speech: "The autumn of 1947 was a time of both anxiety and nascent opportunity. Amidst the devastation after World War II, the United States was beginning to frame a political, security and economic strategy for what became know as the Cold War. Earlier in the year, President Truman had announced a doctrine about using economic and financial aid to support free peoples resisting armed minorities operating through networks of subversion. In June, Secretary of State Marshall had launched a comprehensive program for the 'revival of a working economy in the world so as to permit the emergence of political and social conditions in which free institutions can exist.' It was clear to those individuals meeting in Geneva 54 years ago …. that trade was inextricably linked to recovery, development, and security." See: Robert B. Zoellick, "The WTO and New Global Trade Negotiations: What's at Stake" (mimeo). While the membership of the GATT was shaped by the political/security context, within the GATT, the straightforward task was dismantling trade barriers amongst the parties.

[4] As reported in Bernard M. Hoekman and Michel M. Kostecki, *The Political Economy of the World Trading System: From GATT to WTO* (Oxford: Oxford University Press, 1996), p. 18.

> Cabinet ministers or the equivalent, working in the same issue-area, initially from a relatively small number of relatively rich countries, got together to make rules. Trade ministers dominated GATT; finance ministers ran the IMF; defense and foreign ministers met at NATO; central bankers at the Bank for International Settlements (BIS). They negotiated in secret, then reported their agreements to national legislatures and publics." [5]

This was not a pure model of course; finance ministers were necessarily involved in trade policy decisions, because of the revenue reduction that tariff cuts implied. But by and large, other ministers were effectively excluded by the device of holding negotiations under the shroud of diplomatic secrecy and presenting the results to domestic Cabinet colleagues as largely unalterable *faits accomplis*.

One reason that this was possible is that the early rounds restricted themselves to dealing with easy-to-understand border measures—for the most part, the tariff. Broader issues "behind the border" were not tackled, and other ministries therefore did not need to get involved. By the same token, they did not clamour for such access either. As Keohane and Nye argue:

> "The club model was very convenient for officials negotiating agreements within issue-areas, since .... officials in other government bureaucracies, and in international organizations defined as working in different issue-areas, were excluded from the negotiations. Environmental, labour rights, and finance officials did not participate in a regular basis in WTO

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[5] See, Robert Keohane and Joseph Nye, "The Club Model of Multilateral Cooperation and the WTO: Problems of Democratic Legitimacy", paper delivered at the conference *Efficiency, Equity and Legitimacy: The Multilateral Trading System at the Millennium*, June 1-2, 2000, John F. Kennedy School of Government, Harvard University. http://www.ksg.harvard.edu/cbg/trade/keohane.htm .

negotiations. In general, they did not object to their exclusion."[6]

There was, accordingly, little reason to look for factors beyond trade policy itself for the rationale for new trade negotiations.

The Dillon Round (1961-1962)

The Dillon Round[7] stands out as something of a *sui generis* event. This round started out largely to settle a number of issues related to the formation of two preferential trade arrangements in Europe: the European Economic Community (EEC) and the European Free Trade Association (EFTA).[8]

The negotiations undertaken in the context of this round were marked by a weak U.S. negotiating authority. This reflected, in the first instance, the limitations of the 1958 extension of the Reciprocal Trade Agreements Act.[9] More deeply, it also seems to have reflected a rather complacent attitude toward trade policy pressures. For example, the Haberler Report, issued in 1958 by a number of eminent academic economists,[10] concluded that the GATT process had successfully reached the end of postwar reconstruction. This complacency was echoed in the new Kennedy Administration's attitudes toward trade. For example, the 1961 Economic Report of the President, issued shortly before the Dillon Round was engaged, limits its discussion of international trade issues and of the upcoming Dillon Round to one paragraph, which noted that:

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[6] Ibid.

[7] The round was named for C. Douglas Dillon who, as the U.S. Undersecretary of State in the Eisenhower Administration, suggested its launch. Dillon later served as Treasury Secretary in the Kennedy Administration.

[8] Specifically, the negotiations were intended to resolve claims arising under GATT article XXIV:6 with respect to the just-created EEC, as well as to examine the Article XXIV consistency of the EEC and the EFTA which had been established by the West European countries that had chosen not to join the EEC. Both exercises ended inconclusively, setting the precedent for future such investigations of consistency of regional free trade arrangement with Article XXIV, which specifies the conditions under which such arrangements comport with multilateral rules.

[9] For a discussion of the context, see Michael M. Hart, *Fifty Years of Canadian Statecraft: Canada at the GATT 1947-1997* (Ottawa: Centre for Trade Policy and Law, 1998), p. 74.

> "...discrimination against United States exports has diminished very substantially; the major remaining quantitative trade restrictions on United States exports are against agricultural products, particularly in Western Europe. Foreign restrictions on capital transactions, however, continue to be considerable. The United States government expects that there will be continued progress in the dismantling of restrictions on world trade and payments. In particular, the great economic strength of the countries belonging to the European Economic Community and the European Free Trade Association should facilitate a significant lowering of tariff barriers during the forthcoming Geneva GATT negotiations."[11]

The result of the Dillon Round was to some extent a step backward in trade policy terms: a successful EEC effort to unbind many tariff concessions in agriculture previously made by individual member states. The United States, for geopolitical reasons related to the Cold War, acquiesced in this effective backsliding from earlier progress on trade liberalization over the protests from Department of Agriculture.[12]

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[10] The panel, which was chaired by the distinguished economist Gottfried Haberler of Harvard, was set up by the GATT in 1957, shortly after conclusion of the fourth round of GATT negotiations. See *Trends in International Trade*, GATT, 1958.

[11] See *Economic Report of the President*, January 1961, p. 40.

[12] The geopolitical rivalry with the Soviet Union was, in fact, peaking with the successful launch of Sputnik, the Cuban missile crisis and Khrushchev's heel-thumping growth challenge at the UN. The need for a

Trade policy *per se* clearly did not rank high on anyone's priority list at this time. For example, at the beginning of 1963, shortly after the conclusion of the Dillon Round, the U.S. perspective on the international economic landscape, as summed up in the Economic Report of the President released in January of that year, continued to suggest a certain complacency. The chapter on the international economy opens as follows:

> "The international economy has undergone a remarkable transformation in the past decade. For many years after World War II, import quotas, discriminatory trade practices, and exchange restrictions on all forms of international payments characterized the bulk of international transactions. Though further progress needs to be made, much of this restrictive legacy has now been swept away." [13]

There is no sign here of American concern over the state of the trading system or the failure of the Dillon Round to advance trade policy *per se*. This, coupled with the predominant role of geopolitical considerations in shaping the outcome of the Dillon Round, is a clear sign of a more important role emerging for broader contextual factors. This marks the Dillon Round as the beginning of a transition phase in the development and implementation of trade policy.

It is, however, rather prophetic that the above-cited passage continued with the following comment on developments in the international payments area:

> "This transformation culminated in the formal acceptance by the major European countries in early 1961 of the

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strong Western Europe as a bulwark against communism overrode other considerations at this time.

[13] *Economic Report of the President* (Washington: Council of Economic Advisors, 1963), p. 91.

currency convertibility requirements of the International Monetary Fund. It is a notable achievement and has far-reaching implications for the U.S. economy and U.S. economic policy."[14]

Indeed, the Economic Report of the President was right on both counts: payments issues did constitute the major international issue of the 1960s and were to play an important role in shaping the course of trade policy.

The Kennedy Round (1963-1967)

There are two hints that trade policy during the Kennedy Round had entered a new political-economy space. First, the popular name adopted for the round was that of President Kennedy, suggesting that the broader economic context was at play. Second, the round took substantially longer to negotiate than earlier rounds.

While the Kennedy Round resulted in important tariff cuts, it is an interesting question as to why it took until 1963 to launch a serious tariff-cutting exercise. In reality, only two of the five preceding rounds resulted in major tariff cuts: one of these had occurred prior to the formation of the GATT, in the first negotiation in Geneva in 1947, and the second in Torquay in 1951-1952. The negotiations in Annecy and the second round of negotiations in Geneva both produced disappointing results, as did the Dillon Round. Meanwhile, a clear-cut trade policy agenda had long been in hand from the Haberler Report of 1958, which had made recommendations in respect of three theses that the panel of experts had been asked to examine. Specifically, the Report recommended:

(a) shifting to a systemic approach to tariff cuts to replace the product-by-product approach;
(b) addressing trade in agricultural goods; and

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[14] Ibid., p. 91.

(c) giving developing countries greater flexibility to use trade restrictions to promote infant industrial development, particularly key industries that would spur further industrialization, to address balance of payments issues (which they would be more likely to face), and more generally to "turn the international terms of trade … in [their] favour."

It is always instructive to look to the "dog that didn't bark." With average tariffs still fairly high at the time and many other issues to be addressed, the long hiatus in significant forward movement on trade policy is not easy to explain.

As well, the fact that two of the Haberler recommendations, trade in agriculture and developing country issues, are still featured prominently in the just-launched Doha Round is silent testimony to the witch's brew that these two issues have constituted for trade policy over the many decades since Gottfried Haberler and his co-panellists issued their report.[15]

By the same token, the fact that the Haberler Report agenda was firmly engaged in the Kennedy Round suggests that circumstances had changed to end the hiatus of the late 1950s and early 1960s. In retrospect, the contextual factors that would drive and shape the Kennedy Round were already incubating during the Dillon Round: these were the emergence of persistent balance of payments problems in the United States and elsewhere, and the reactions of governments in devising creative, inside-the-border solutions to tough border problems. Secondly, geopolitical rivalry was escalating and U.S. geoeconomic considerations, which were never far from the surface in any event, coalesced to give impetus to trade talks.

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[15] It is interesting to recall here why agriculture was largely excluded from the original GATT. As Philip Trezise notes: "When GATT was written in 1947, it was recognizably an American document, drawn in substance and to a considerable extent in language from drafts written in the Department of State for the commercial policy chapter of the proposed International Trade Organization. The provisions for agricultural trade substantially exempted from GATT discipline the U.S. farm programs inherited from the New Deal. Article XI, the prohibition of import quotas, does not apply to agricultural commodities subject to production or marketing controls. Article XVI, which frowns on trade-distorting subsidies in general, allows export subsidies on primary products, with the vague injunction that such subsidies capture no more than an 'equitable' share of trade. These openings were widened in 1955 when Congress forced the Eisenhower administration to obtain a sweeping waiver of GATT rules for any article produced under a U.S. farm program." See Philip H. Trezise, "The Uruguay Round: High Hopes, Hard Realities, and Unfinished Business," Brookings Institution. Volume 14, Number 1, Winter 1991. The difficulties in advancing agricultural sector liberalization may to some extent flow from this "original sin" on the part of the prime mover of the original GATT.

The Balance of Payments Pressures

In contrast to what is often considered to be a "mercantilist" perspective of modern trade policy (as reflected in the importance attached to maintaining trade and current account surpluses), the principal U.S. concern in the 1960s was the flip side of the consistent current account surpluses that it had run following WWII—namely, the capital account deficits and the still broader balance of payments deficits that had served to transfer large quantities of gold and liquid dollar reserves to the rest of the world. [16]

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[16] It is worthwhile to recall the theoretical views that underpinned policy at that time, and more particularly, what matters were perceived as policy "problems." As Harry Johnson wrote in 1962: "In the past 20 years, there has been a great deal of change in the theoretical approach to balance-of-payments problems and the mechanism of adjustment. This has been associated, on the one hand, with the Keynesian revolution, which led to the formulation of theories in terms of disequilibrium rather than equilibrium and, on the other hand, with the prevalence of balance-of-payments problems particularly in the postwar period. Very briefly, the change has been from the idea of a mechanism of adjustment to the idea of the balance of payments as a policy problem." In the context of the Bretton Woods system of fixed exchange rates, the "balance of payments problem" facing the United States was that its domestic currency supply might become insufficiently backed by a reserve of gold or foreign exchange. While balance of payments problems thus formulated were understood to be fundamentally monetary phenomena, the path to their resolution did not necessarily lie in the financial domain, especially if the repercussions there were undesirable. See: H.G. Johnson, *Money, Trade and Economic Growth* (Great Britain: Unwin University Books, 1962), p. 16.

The Kennedy Administration, which took office early in 1961, thus started its term with the dollar under pressure.[17] While acknowledging the importance of the capital outflows in helping to rebuild reserves in the major European countries and thereby providing them greater flexibility to promote economic growth and to reduce restrictions on international transactions, the United States began to have concerns and to give voice and effect to these concerns. As the 1963 Economic Report of the President noted:

> "These U.S. payments deficits have persisted beyond the point where they improve the distribution of the world's monetary reserves. Indeed, continuing large payments deficits by the United States could create doubts about the stability of the dollar and threaten the efficient operation of the international payments system. As a result, the U.S. government has had to pay close and constant attention to the net financial outcome of its transactions, and those of its citizens, with the rest of the world. Important measures have been taken to improve the payments position of the United States, and domestic economic policy has been framed with attention to the balance of payments."

Here it will be recalled that the recovery from the 1960 recession in the United States was not particularly robust, with a disappointing slowdown in the pace of recovery in 1962. There was accordingly considerable pressure for domestic policy reasons to adopt expansionary fiscal and monetary policies. From an American perspective, the optimal way to resolve the balance of payments problem was, therefore, to deal with it directly: to expand the merchandise trade surplus further, to intervene in other current account areas such as travel, and also to directly address capital account issues such as foreign direct investment.

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[17] For example, in the run-up to the Presidential election of 1960, fears that the new Administration would devalue caused the price of gold on the London gold market to spike to US$40 an ounce, compared to the Bretton Woods conversion price of US$35 an ounce. See Michael D. Bordo and Anna J. Schwarz, "Under What Circumstances, Past and Present, Have International Rescues of Countries in Financial Distress Been Successful," NBER Working Paper 6824, December 1998, p. 31.

It is worthwhile in this connection to recall the international relations context of the era. The U.S. dollar's major role as a reserve currency to some extent held the world hostage to U.S. policy and forced acquiescence in U.S. policy decisions. As Barry Eichengreen describes:

> "They [the Kennedy and Johnson Administrations] acknowledged the severity of the dollar problem while displaying a willingness to address only the symptoms, not the causes. Dealing with the causes required reforming the international system in a way that diminished the dollar's reserve-currency role, something the United States was still unwilling to contemplate. Bolstering this otherwise untenable situation was international cooperation [such as] the London Gold Pool. …. America's ultimate threat was to play bull in the china shop: to disrupt the trade and monetary systems if foreign central banks failed to support the dollar and foreign governments failed to stimulate merchandise imports from the United States. Foreign governments supported the dollar because it was the linchpin of the Bretton Woods System and because there was no consensus on how that system might be reformed or replaced."[18]

A further point of significance in the context of this paper is that the request to Congress for negotiating authority in the Kennedy Round was based only in part on commercial considerations; geopolitical considerations also figured prominently as the request for sweeping negotiating authority was in part aimed at forging stronger ties with Europe and Latin America in particular.

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[18] See Barry Eichengreen, "Globalizing Capital: A History of the International Monetary System (Princeton: Princeton University Press, 1996), pp. 129-130.

It was in this broader context that President Kennedy sponsored the Trade Expansion Act of 1962, which authorized the Administration to negotiate tariff reductions of up to 50 percent and which provided the rationale for naming the round for President Kennedy

The new negotiations were agreed to at the meeting of ministers of the GATT Contracting Parties in Geneva in May 1963, but were formally launched only a year later; accordingly, negotiations ran from May 1964 to June 1967. The length of the negotiations reflected the fact that, for the first time, trade negotiations embraced issues beyond the tariff itself.

Throughout the Kennedy Round, balance of payments issues dominated the economic policy concerns of the successor Johnson Administration, as shown by the following contemporaneous developments:[19]

- enactment in September 1964, of the Interest Equalization Tax, which was designed to deter excessive U.S. purchases of foreign securities;
- in response to the worsening of the U.S. balance of payments in the fourth quarter of 1964, announcement by President Johnson of a 10-point balance of payments program of restrictive measures to stem the outward flow of U.S. dollars, including a Voluntary Cooperation Program, which requested U.S. businesses to restrain direct investments abroad in developed countries (February 1965);[20]

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[19] See Foreign Relations Series Volume Summary, 1964-1968, Volume VIII, International Monetary and Trade Policy, Archive Site for State Department information prior to January 20, 2001. As Barry Eichengreen notes, "The array of devices to which the Kennedy and Johnson administrations resorted became positively embarrassing." See Barry Eichengreen, "Globalizing Capital", op. cit. p. 129.

[20] These included a ceiling on Canadian borrowings (which were exempt from the Interest Equalization Tax), the Gore Amendment, which applied the tax in respect of foreign debt obligations by commercial banks, a travel tax, and a cut in military expenditures abroad. Source: Foreign Relations Series

- consideration of mandatory restrictions on capital outflows (second half of 1965 and again in 1967);
- the expansion and tightening of the Voluntary Cooperation Program (December 1965 and increased pressure on businesses to participate in 1967);
- pressure on governments in countries where U.S. troops were stationed to make "offset" expenditures on U.S. military goods (first half of 1966; the United States had already successfully pressured Germany and Italy into agreeing to such offsets in 1962);
- consideration of still more drastic measures including a tax on tourist travel (second half of 1996);
- extension of the Interest Equalization Tax for two years (July 1967);
- enactment of the Foreign Investors Tax Act to attract foreign investors in U.S. securities (1967); and
- appointment of a public/private-sector task force to develop proposals aimed at expanding foreign travel to the United States (1967).

In short, during the run-up to, and the negotiation of, the Kennedy Round, the principal international economic policy issue confronting the United States and (as will be discussed below) many of the other developed countries was the balance of payments. The United States left few stones unturned in trying to stem the net outflow of dollars; it is difficult, therefore, to imagine that policy in respect of the single largest international activity involving the exchange of currency, namely merchandise trade, was anything but centrally motivated and guided by the same balance of payments concerns, including the ability to sustain convertibility of the U.S. dollar. If one wishes to understand the resurgence of interest in tariff policy in the mid-1960s after more than a decade of marginalization, one need look no further than the balance of payments pressures of that period.

Volume Summary, 1964-1968, Volume VIII, International Monetary and Trade Policy, Archive Site for State Department information prior to January 20, 2001.

In January 1962, during the course of the Dillon Round, the EEC agreed on the outlines of a Common Agricultural Policy (CAP). As discussed above, U.S. reaction to this development was at first ambivalent. The CAP was accommodated because of the contribution it made to European political unity, which the United States saw as desirable in the Cold War context. However, U.S. authorities were not oblivious to the risk that it could severely restrict U.S. market access in agricultural products in which it and other countries (including, *inter alia*, Canada, Australia and Argentina) were highly competitive. The Trade Expansion Act signed by President Kennedy in October 1962 was developed in part for the purpose of damage control: to limit the impact of the CAP on other agricultural exporters, including by reversing certain "early actions implementing the Common Agricultural Policy [that] indicate a trend toward increased protection."[21]

The early orientation of the CAP resulted in levels of support for agricultural exports being a prominent recurring theme throughout the Kennedy Round, even to the point of threatening its disruption. The course of negotiations and the International Wheat Agreement that emerged from the negotiations are further examples of how contextual economic policy developments (in this case the formation of the EEC and the catalytic role of the CAP within it) helped to shape the substantive outcomes of trade rounds as well as helping to determine their timing. By contrast, the internal logic of trade policy, as summarized by the Haberler Report, had been pointing to the need to address agriculture since 1958 without any noticeable effect on the course of actual negotiations.

A similar story can be told about the textiles component of the Kennedy Round negotiations. Here, it was a secular economic trend, namely the pressure on wool textiles from the emergence of synthetic fibres, which created domestic problems in textile production for the United States (and other developed countries). This resulted in the usual lobbying for restraints on imports. How these internal economic problems were handled, meanwhile, was quite importantly influenced by purely political considerations. In a letter to President Johnson in September 1964, U.S. Secretary of State Dean Rusk explained the textiles issue and then added this comment apropos of how it might be handled:

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[21] Economic Report of the President, January 1963, p. 114.

> "We are in real trouble in Japan as a result of the succession of restraints we have imposed on their trade over the past two or three years. We cannot afford again to make the same mistake with Japan that we made during the thirties. Italy also is, as you know, in a dangerous political phase—and actions by us to restrict their exports while their economy is so shaky would play into Communist hands. We know [Special Representative for Trade Negotiations] Chris Herter is also greatly concerned about this because of its implications for the Kennedy Round."[22]

Notably, the multilateral trade implications were an afterthought to the principal concerns of the Administration, which were geopolitical in nature. It is to be noted that this was an era of U.S. policy making in which the State Department still had responsibility for trade.

A third feature of the economic context in which the Kennedy Round unfolded was the interaction between trade and industrial policy measures that were encouraged (or at least not discouraged) by the general climate of concern about the balance of payments situation.

Perhaps the best example of this feature is the issue that became an important element of the Kennedy Round, namely the American Selling Price (ASP) valuation system for U.S. imports of benzenoid chemicals, which set *ad valorem* tariffs on the basis of the U.S. price rather than on the exporter's price. This constituted a non-tariff barrier, action on which the Europeans made a precondition for opening negotiations on chemicals. Another example was the Urban Mass Transportation Act, which imposed Buy American requirements on contractors paid with funds made available under that law.

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[22] Message from Secretary of State Rusk and the Under Secretary of State George Ball to President Johnson, in Texas, September 26, 1964, Foreign Relations of the United States, 1964-1968, Volume VIII, International Monetary and Trade Policy, Department of State.

Other Transitional Features

Several other features of the Kennedy Round are worth noting. First, reflecting the attempt made during this round to reach beyond tariffs, Congress declined to adopt the non-tariff measures agreed in the round (in particular, the Anti-dumping Code, the Chemicals Agreement and changes to the ASP valuation system). The trade policy tail had started to wag the economic dog, and Congress would have none of this. It will be recalled in this regard that Congress had ceded trade policy to the safer custody of the Executive Branch following the disastrous Smoot-Hawley Tariff Act of 1930,[23] but felt very possessive about domestic economic policy.

Second, the intrusions into domestic policy spheres also complicated the process of reaching agreement, underscoring the fact that the "club model" was starting to fray. State Department archives describe the scene in Washington during the days leading up to the May 15 agreement to conclude the Kennedy Round, which was signed in Geneva on June 30, 1967, as follows:

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[23] The effective transfer of trade negotiating responsibility to the Executive Branch is associated closely with the person of Cordell Hull, Secretary of State in the Roosevelt Administration under whose tutelage the Reciprocal Trade Agreements Act of 1934 was developed. This Act was the precursor to the grants of "fast track" authority to postwar Administrations to engage in the GATT rounds.

> "The sequence of events leading to a Kennedy Round agreement in May 1967 took on all the aspects of a foreign policy crisis, requiring Presidential decisions in Washington and round-the-clock meetings in Geneva. In order to manage last-minute Kennedy Round strategy, the President...in April 1967 ordered a small and secret command group at the White House, consisting of Under Secretary of State for Political Affairs Eugene V. Rostow, Under Secretary of Agriculture John Schnittker, Acting Secretary of Commerce Alexander Trowbridge, and [Deputy Special Assistant, Francis M.] Bator, to communicate directly in Geneva with [Special Representative for Trade Negotiations] William M. Roth."[24]

Third, the Johnson Administration took steps to "sell" the final outcome of the negotiations to interested segments of the American public. As the archival material suggests: "It was presumably with the need for public support in mind that in March 1964, President Johnson appointed 37 prominent citizens to a Public Advisory Committee on Trade Negotiations, ...and he considered advice from industry and labour leaders on such issues as anti-dumping."[25]

These developments foreshadow the complexities that now characterize the conduct of trade policy, such as the involvement of non-governmental organizations (NGOs) and the complex interplay of domestic policy interests with international obligations and objectives. In this context, the Kennedy Round may be said to have ushered in the modern era of trade liberalization. Alternatively, if one thinks of the early postwar period as "modern," then the Kennedy Round ushered in the post-modern era.[26]

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[24] Foreign Relations Series Volume Summary, 1964-1968, op cit.

[25] Ibid.

[26] See William A. Dymond and Michael M. Hart, "Post-Modern Trade Policy: Reflections on the Challenges to Multilateral Trade Negotiations after Seattle," *Journal of World Trade* 34 (3): 21-38, 2000. Dymond and

The above story has played down the weight that the internal logic of trade policy had in shaping the actual outcomes. Accordingly, it should be noted that the trade policy community did not lose the opportunities for forward motion provided by the new-found momentum for trade liberalization. The Kennedy Round generated by far the largest gains in tariff reduction in the history of the GATT up to that time (they are even more impressive if one considers that the opening Geneva Round gains were in place *before* there was a GATT!). Moreover, despite the fact that the movement on agriculture was very modest, the round did deliver a significant achievement on the third of the Haberler Report's recommendations: a generalized tariff preference for developing countries was introduced into the framework of the multilateral system. (Even this, it should be noted, was driven by political economy considerations—it constituted a response to the formation of UNCTAD in 1964 and the formation of the Group of 77, a developing country bloc within the United Nations—rather than the internal logic of trade policy).[27]

The moral of the Kennedy Round story is that the trade policy community needs to "get when the getting is good." The chances to ratchet down trade barriers come rarely; it is only when the stars are aligned that significant progress can be made.

The Tokyo Round (1973-1979)

A review of the timing, the conduct and content of the Tokyo Round provides ample evidence of the growing importance of

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Hart suggest that the Uruguay Round was the epochal event rather than the Kennedy Round as the above observations suggest.

[27] For a discussion of the evolution of the initial measures adopted by the GATT in 1965 into the familiar General System of Preferences, see Bernard M. Hoekman and Michel M. Kostecki, *The Political Economy of the World Trading System: From GATT to WTO* (Oxford: Oxford University Press, 1996), pp. 236-238.

contemporaneous economic and political developments in shaping events in the world of trade policy.

Prior to the round, extensive preparatory work had created what Michael Hart has described as "a solid intellectual foundation for negotiations reaching well beyond the traditional issue of lowering tariff barriers."[28] This included work done within the GATT work program itself, by the Rey Group in the OECD context, and in the United States by the Williams Commission, a blue ribbon panel appointed by President Nixon in 1970 (the report of this Commission is often described as providing the intellectual and public policy basis for U.S. leadership in the new round of GATT negotiations[29]).

However, the arguments for further liberalization were in the first instance entirely ignored—at least in the United States where the next major step taken by the Administration was the enactment in 1971 of the trade-restrictive Nixon Measures.

Moreover, whereas preparations for the round had centred on U.S.-European Community (EC) issues, including the important Article XXIV issues raised by EC expansion and agriculture,[30] the major outcomes and frictions of the Tokyo

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[28] See Michael M. Hart, *50 Years of Canadian Tradecraft*, op, cit. p. 125.

[29] As it turned out, the United States did not, as had been customary, lead but rather followed others into the Tokyo Round. The negotiations were formally launched in the Tokyo Declaration of 1973. It was not until the end of 1974 that the Trade Expansion Act, which authorized U.S. participation in another round of GATT negotiations, was passed.

[30] Specifically, the preparations for the round within the GATT context had focused in good measure on the trade diversion that would be generated by the internal liberalization of trade within the EC and by the entry of new members, who then also became associated with the European aid and trade agreements with developing countries (the Lomé Convention). Michael Hart describes the preparations as follows: "Preparations for the round had made it clear that it would be dominated by the United States and the EC, with Japan still not ready to become an equal partner…. the Tokyo Round would be a bilateral negotiation masquerading as a multilateral negotiation." See Michael M. Hart, *50 Years of Canadian Tradecraft,* op, cit. p. 126. The 1973 Economic Report of the President provides a tidy summary of the issues from the perspective of the United States

Round centred on non-tariff barriers and safeguards—issues that had much more to do with U.S.-Japan trade than U.S.-EC concerns.

To understand what did come out of the Tokyo Round and to understand the actual course of events (including the lengthy delay before serious engagement on the issues actually was made in the late 1970s), it is necessary to return to the broader economic context and specifically to focus on (a) the factors that led to the Nixon Measures of 1971; and (b) the emergence of Japan as a major economic actor on the international scene.

The Nixon Measures

The early 1970s witnessed one of the epochal events of postwar economic history: the breakdown of the Bretton Woods system of fixed exchange rates. This happened in stages.

Very briefly, as noted earlier, the Bretton Woods era witnessed persistent U.S. balance of payments deficits. These led to a growing glut of U.S. dollars abroad, which in turn generated pressure on the U.S. dollar. This led to a series of responses, including the formation of the London Gold Pool in 1961, which essentially institutionalized the arrangements between the Federal Reserve and the Bank of England to fight off the run on the dollar in October 1960. Under the London Gold Pool, the Bundesbank and several other Western European banks joined the Fed and the Bank of England in stabilizing the price of gold on the London gold exchange below US$35.20.

Things began to unravel in 1967: in June, France withdrew from the Gold Pool and in November, balance of payments deficits forced the United Kingdom to devalue sterling, triggering another run to gold. In March 1968, the gold market was closed for two weeks, the London Gold Pool was disbanded and the so-called "two-tier system" was set up with convertibility limited to central banks.

This settled things briefly: after spiking into the $40 range, the price of gold returned to about $35. However, the expansionary fiscal and monetary stance adopted in the United States in 1971 following the 1970 recession (and widely interpreted as a way to ensure President Nixon's re-election in the 1972 campaign) plunged the United States into its first trade deficit of the postwar period (and, indeed, its first since 1888), exacerbating the balance of payments deficit and driving U.S. gold reserves to a record low.

In rapid succession, the Bundesbank announced the floating of the Deutsche mark in response to speculative inflows (May 1971), the Bank of England prepared a request for a US$3 billion dollar conversion (August 9, 1971), and the Nixon Administration responded with the aforementioned Nixon Measures announced August 15, 1971: a "temporary suspension" of convertibility of dollars into gold, a 10 percent surcharge on imports, a 90-day freeze on prices and wages, and a tax on overseas capital investment.

Several months later, in December 1971, the Smithsonian Agreement re-established the Bretton Woods system. The price of gold was increased from $35 to $38 per ounce. This devalued the dollar by 8.5 percent, while other currencies revalued (the biggest revaluations were effected by the yen, which rose 17 percent against the dollar, and by the Deutschemark, which increased by 14 percent). However, despite expanded fluctuation bands, the parities agreed to under the Smithsonian Agreement could not be sustained and by early 1973 the major currencies were all floating.

In September 1973, in Tokyo, with the United States lacking negotiating authority as noted above, the new round was launched.

Arguably, it was the collapse of the Bretton Woods system and the overt protectionism of the Nixon Measures that galvanized the international community and elicited uncharacteristic leadership from Japan, the GATT member that appears to have felt most threatened by the new developments,[31] and that fortuitously happened to be the host of the Ministerial Conference that launched the round.

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[31] The United States had only recently targeted Japan with voluntary export restraints on textiles, and also for the first time on steel.

A remarkable feature of the Tokyo Round is that negotiations went almost nowhere for the first four years or so. There is no real explanation for this from the internal logic of trade policy. A well-prepared intellectual basis for the round was in hand. The first meeting of the Trade Negotiations Committee (TNC) had taken place in late 1973. The U.S. negotiating authority, albeit delayed, provided adequate authority for a major outcome. This was in hand by early 1975, by which time the delegations were also well established in Geneva. Yet serious negotiations were not engaged until early 1977. As Michael Hart observes, "the outward appearance was that the negotiations were marking time".[32]

One explanation is that there was too much else going on in the world—the Yom Kippur War and the ensuing first oil crisis, Watergate and the impeachment of President Nixon, and the U.S. presidential elections in 1976. However, the world is a busy place at any time. Consideration of the economic context provides a more compelling reason for the four-year hiatus.[33]

In the aftermath of the collapse of the Smithsonian system, the European countries elected to maintain the Smithsonian fluctuation bands among each other while the United States and Japan elected to float.[34] For the floaters, the balance of payments ceased to be a policy "problem" *per se* as the exchange rate became the mechanism of adjustment.

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[32] See Michael Hart's description of the early phase of negotiations. See Michael M. Hart, *50 Years of Canadian Tradecraft,* op, cit. at pp. 131-136.

[33] In this regard, it will be noted that the troubled politics of the day did not distract work on the major international economic policy issues of the day: the recycling of petrodollars, the emergence of the Eurodollar market, and the ongoing work to develop a new international financial structure that would culminate in the Second Amendment to the Articles of Agreement of the IMF, which in effect legalized floating. This weakens the case for a lack of attention being the reason that the negotiations marked time for so long.

[34] The European decision reflects the fact that they had large trade shares of GDP and were constrained by the functioning of the EEC, including the CAP. The United States and Japan, by contrast, were both large economies with fairly small trade shares of GDP. For them, floating made more sense.

The yen appreciated from its Smithsonian parity of 308 to the 260-265 range, and for 1973 as a whole, averaged 271 to the dollar, an appreciation of about 33 percent from the pre-1971 Bretton Woods parity of 360. This more or less offset the depreciation that the yen had effected in real terms during the Bretton Woods era.[35]

The exchange rate realignment, coupled with the oil price hike, resulted in Japan's current account surplus being wiped out, Germany's being sharply reduced, and the United States deficit being transformed into a surplus of US$18 billion in 1975, which was massive for the times. In short, for the United States, the external economic issues had been addressed and there was no immediate need to press forward at Geneva. And so the trade negotiators "marked time."

The Re-emergence of Pressures and the Gain in Momentum

Forward movement on the Tokyo Round was not restored until 1977. Importantly for this analysis, this coincided with the re-emergence of external pressures for the United States: as the U.S. economy recovered from the 1975 slump, its current account swung sharply back into deficit. In 1977, the deficit was almost as large its surplus had been in 1975.

For the new Carter Administration, which took office at the beginning of 1977, the external situation posed a severe constraint on its policies seeking to invigorate growth. Not surprisingly, U.S. attention focussed particularly on Japan, which had in the meantime swung back into a large surplus, aided by the fact that the yen had in the meantime depreciated back to the 300 range. Under pressure from the Carter

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[35] One estimate put the Bretton Woods era real appreciation of the yen at 27 percent. For a discussion, see C. R. Henning, *Currencies and Politics in the United States, Germany and Japan*, Washington, Institute for International Economics, 1994), pp. 123-127.

Administration, the yen soared.[36] For 1978 as a whole, it averaged 210 per dollar, 71 percent above its Bretton Woods parity, at one point breaking through the 200 mark.[37] Pressure was also brought to bear on Japan's through the G7 to adopt expansionary fiscal and monetary policies. The results were manifest in that Japan pushed interest rates to record lows and expanded its fiscal deficit to a high of 5.5 percent of GDP in 1978.

Accordingly, the resumption of movement in the round coincided with the re-emergence of external pressures on the United States and important developments in the international finance arena, most importantly the second major episode of yen revaluation.

The Results of the Tokyo Round

While the Tokyo Round resulted in broad tariff reductions, it is more noted for several supplementary agreements, namely the codes on dumping, government procurement, standards, and subsidies, as well as strengthened procedures that substantially expanded GATT's role in resolving trade disputes.

The nature of this outcome, involving a heavy admixture of beyond-the-border issues to the tariff exercise, come as no surprise in light of the U.S.-Japanese trade conflicts of this period—the United States countered what it saw as protectionism with its own protectionism and with an attempt to reach inside the Japanese border to counter the frustrating non-tariff measures that Japan, in the eyes of the United States, was using to run up its structural surpluses.

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[36] The Deutschemark also came under upward pressure but to a much lesser extent.

[37] For an account of this period from a capital market perspective, see Barry Eichengreen, "Globalizing Capital," op cit. pp. 141-145. Also see C. R. Henning, *Currencies and Politics in the United States, Germany and Japan*, Washington, Institute for International Economics, 1994, pp. 127-129. Henning describes the dispute between the United States and Japan as acrimonious, with the United States accusing Japan of maintaining an inappropriately competitive exchange rate and disguising the true extent of their interventions by using private banks.

Even the unfinished business centred on U.S.-Japan issues: the Japan-U.S. bilateral tariff negotiation and the "safeguards" negotiation, which centred on market disruption by low-cost imports from the developing countries. Addressing safeguards had been an important element of the Tokyo Declaration, and clearly represented an important issue for Japan, which felt targeted by the use of such measures, by the United States in particular.

Generally, the waxing and waning of momentum in the Tokyo Round matched the waxing and waning of revaluation pressures on the yen. None of this is obvious from a uniquely trade policy-centric interpretation of the unfolding of the Tokyo Round; the broader context counted.

The Uruguay Round (1986-1994)

The connection between the Tokyo and Uruguay Rounds is evident in a number of ways, including the fact that the latter was much concerned with the unfinished business of the former. Substantively:

- trade in agriculture and the growing area of services trade were still conducted outside the framework of the GATT;
- textiles trade was dealt with in the GATT but in contradiction to its principles;
- a variety of new restraints on trade (e.g., the so-called "grey-area" measures such as voluntary export restraints or VERs) flourished in the early 1980s; and
- the various new codes negotiated in the Tokyo Round had revealed their flaws when put into practice.

There was, accordingly, a ready-made and well-understood trade agenda to be dealt with. From a trade policy perspective, the launch of the Uruguay Round was thus to be a return to trade business as usual in refining and perfecting the rules-based system. The only thing required was for the United States to exercise its customary leadership.

What accounts, then, for the failed GATT meetings following the completion of the Tokyo Round, including at the Ministerial level (e.g., in 1982)? In addressing this question, it is useful to again return to contextual factors.

Another Hiatus from Pressures on the Trading System

While the Tokyo Round may have left unfinished business for trade experts to address, the yen (and mark) revaluations of the late 1970s, coupled with the second oil price hike, again caused the external accounts to swing: Japan and Germany fell into deficits while the United States moved into surpluses.

With no real fish to fry on the external side, and with serious domestic issues facing it, the first Reagan Administration, which took office at the beginning of 1981, turned to matters at home. With Paul Volcker at the helm of the Federal Reserve, all stops were pulled out in halting and reversing the acceleration in inflation that had marked the 1970s. Meanwhile, the supply-side revolution was launched to reinvigorate the U.S. economy.

It was in this context that the 1982 GATT Ministerial meeting failed to achieve the launch of a new round of trade negotiations that trade policy practitioners had been working towards.

Things however were soon to change in this regard as the domestically focused U.S. policies began to result in large external imbalances. The restrictive monetary stance of the Fed under Volcker caused the U.S. dollar to appreciate. At the same time, the combination of tax cuts and fiscal stimulus resulted in the emergence of large fiscal deficits. These factors contributed to a steep deterioration of the current account. From a surplus in 1981, the current account balance slid to deficits of US$12 billion in 1982, US$44 billion in 1983, and US$99 billion in 1984.

By the second half of the first Reagan Administration, external pressures were being felt politically as exporters and import-competing industries began to complain. Japan came under pressure to strengthen the yen. However, it was not until the second Reagan Administration with James Baker, described by Barry Eichengreen as "pragmatic and interventionist," in the U.S. Treasury that a full-fledged policy shift in the United States took place.[38] The main economic problems in the United States were now seen to lie in the over-valued dollar and the trade protectionism of its partners, in particular of Japan, which was again building up large surpluses. The post-Tokyo Round hiatus for trade policy would soon be over.

The Establishment of Launch Conditions and the Role of Japan

The renewed interest of the United States in its external position found Japan (and to a lesser extent Germany) in a vulnerable position. Even as the U.S. current account deficit climbed to US$124 in 1985, Japan's surplus rose to US$51 billion. Germany also had seen its surplus increase, albeit to a much more modest level of US$18 billion.

The first major action taken to address this was the Plaza Accord of December 1985, which signalled the desire for a substantially lower valuation for the dollar, and a significant appreciation of the yen and the European currencies. Japan also came under pressure again from the United States and other G7 partners to adopt more expansionary monetary and fiscal policies.

However, rather than improving, the external imbalances widened in 1986. The U.S. deficit sank to a new record of almost US$150 billion while Japan's surplus soared to US$86 billion and Germany's to US$41 billion. The focus shifted to trade and the road led to Punta del Este, Uruguay, where on September 15, 1986, yet another GATT Ministerial convened and a round of trade negotiations, the eighth, was launched.

The United States is generally credited with taking the lead in launching the Uruguay Round. Indeed, the EC and Japan are typically described as cautious about the proposed negotiating agenda, while some developing countries, notably India and

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[38] See Barry Eichengreen, *Globalizing Capital*, op. cit. p. 149.

Brazil, were openly critical. Seen in context, the United States can be said to actually have steamrolled the opposition in order to get an agreement.

The Course of Negotiations

The chequered history of the Uruguay Round negotiations also deserves comment from a contextual point of view. Certainly, the low point in the process came with the failure of the 1990 GATT Ministerial in Brussels, which cast considerable gloom over the eventual prospects for the round. Several developments intervened between the launch of the round in 1986 and this, the nadir of the process.

First, U.S. attention shifted to regional trade pacts, first with Israel but then much more importantly with its largest trading partner, Canada. The Structural Impediments Initiative (SII) was launched in 1989 to directly target Japan's surpluses. The post-Plaza dollar devaluation eventually yielded dividends, as the weakening of the dollar (including against the Canadian dollar) reversed the trend on the U.S. current account. This was aided and abetted by the slowing of the U.S. economy and fiscal contraction. By 1990, the U.S. current account deficit had been cut in half compared to its peak level of US$163 billion in 1987 and was on its way to a surplus of US$4 billion in 1991. In short, the United States was achieving success through means other than the multilateral negotiations. With the pressures on the United States dissipating, if not entirely defused, pressure on the trade negotiators eased. While it would be a stretch to draw a cause and effect relationship between any of these developments and the failure to conclude the round on time, it is noteworthy that the context was not exactly propitious for success.

The actual conclusion of the round several years later also seems to have been helped by some fortuitous circumstances.

First, in the United States, economic recovery coincided with a steep widening of the current account deficit (which reached US$134 billion in 1994 when the Agreement at Marrakech was signed). At the same time, a currency solution to the U.S.

external deficit was simply not to be had, as the dollar was already plumbing its all-time lows against the yen and mark while the rise of the latter two currencies was acting as a tourniquet on growth in Japan and continental Europe respectively. Accordingly, trade policy was the best available tool and the United States put its weight behind it. In rapid succession, the Uruguay Round was concluded, the NAFTA agreement was signed and in Bogor, Indonesia, the APEC commitment to free and open trade in the Asia Pacific was announced—all took place in 1994.

Second, in the developing world, the explosion of export-led growth in East Asia changed attitudes. Whereas many developing countries had signed onto a new round at Punta del Este in 1986 because they had been effectively pressured into doing so, now they were actually beginning to embrace the concept of trade liberalization as a growth strategy *par excellence*.

Europe, meanwhile, had already spent much of its powder in terms of stimulating economic growth through the single market exercise that was completed in 1992. It was still experiencing slow growth, not least due to the high valuation of European economies linked to the upwardly mobile mark, the diversion of Germany's energies to dealing with reunification, and the fiscal restraint imposed by the need of many member countries to meet the Maastricht conditions for monetary union. Accordingly, it needed a deal to help reinvigorate economic growth as well.

Japan, meanwhile, remained under intense pressure, as its current account surplus reached its ultimate zenith in 1993-1994 at US$131 billion and US$130 billion respectively, while the yen was nearing its ultimate peak of 79 to the dollar, which would be reached in April 1995.

Simply put, a trade deal was much easier to pull together in 1994 than it had been in 1990. Circumstances and context mattered very much.

The causes of the failure of the WTO Ministerial at Seattle in November/December 1999 have generally been discussed in trade policy terms, with particular emphasis on the role of civil society. The context has not been entirely ignored given the hard-to-miss influence of the U.S. political calendar on the management of the Ministerial by the Clinton Administration—most notably, the speech given by President Clinton on the eve of the Ministerial, which focused on the inclusion of labour rights in any round, an allusion with political importance in the upcoming presidential campaign but a poison pill for the negotiations.

Other elements of the contextual setting for the launch of a new round in Seattle, however, have tended to be given short shrift, if weighed in the balance at all.

From the perspective of the arguments made above, the United States in 1999 was not in a situation that would make it a strong supporter, and certainly not a leader, of new negotiations. While it had a large current account deficit, indeed an unprecedented one in historical perspective, it was also approaching the negotiations from a position of almost unprecedented economic strength in all other regards. U.S. confidence was at an all-time high due to the wealth created by the dot.com phenomenon that rode as well as drove the technology and equity market boom of the late 1990s. Any insecurities that the United States might have had about the rising stars in East Asia were now a forgotten nightmare—the Asian crisis had exposed Japan and the other "tigers" as mortal, and indeed, Asian economics had been widely dismissed as representing an inferior and corrupt economic model.[39] The domestic issues now centred on the relatively pleasant decision of how to spend what seemed like almost unimaginable fiscal surpluses. Meanwhile, the United States was no longer viewing events such as Sony buying CBS as evidence of U.S. decline, but rather as evidence of its global leadership—foreign capital was converging on safe American shores. And the U.S. dollar, although still comparatively low vis-à-vis the yen and mark by historical standards, was riding high in North America and generally faring well on the world's currency markets.

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[39] Recall here the credit that Paul Krugman was widely given for purportedly anticipating East Asia's demise in his article, The Myth of Asia's Miracle, which compared the East Asian growth model to that of the Soviet Union in terms of begin based on the mobilization of latent factors of production rather than innovation and efficiency gains.

The only economic issue of concern was the current account deficit, and even this was not an immediate issue. First, it was being discounted because of the positive role that it was playing in supporting the economic recovery in Asia from the 1997-1998 economic and financial crisis. Moreover, the pressures were not immediate because of the influx of investment capital. Writing before Seattle, Catherine Mann, a well-respected U.S. trade economist, concluded that the U.S. current account deficit would be sustainable for several more years.[40] In politics, that is close to eternity.

At the same time, insofar as there *was* a political aspect to the current account issue, it was with respect to China's bilateral surplus with the United States. The collapse of Japan's "geoeconomic" challenge, coupled with the spectacular rise of the Chinese economy, had put the latter economy on the U.S. radar screen, much the way that Japan had loomed in the run-up to the Tokyo Round.[41] But China was not in the WTO, and U.S.

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[40] See Catherine L. Mann, *Is the U.S. Trade Deficit Sustainable?*, Washington, D.C.: Institute for International Economics, 1999.

[41] By the 1980s, Japan had not only shown up on the U.S. radar screen, it was seriously posing its "geoeconomic" challenge to the United States. Like the Soviet Union in the early 1960s, Japan worked differently than the United States and, like the Soviet Union, it was putting up challenging growth rates and recording technological successes. In short, Japan had announced itself as a force to be reckoned with—and in a more fundamental sense than simply trade in textiles or autos. Japanese concepts such as *keiretsu* were appearing in U.S. business discussions—in contrast, one might add, to critical commentary on Europe, which was suffering from "eurosclerosis" in the view of many analysts. By the late 1990s, however, concern about Japan had been replaced by a certain triumphalism.

bilateral issues with China were being addressed in the latter's accession negotiations. The contribution that a round could make to this was not at all clear.

In short, there was a singularly poor alignment of contextual factors prior to Seattle, quite apart from the travails of WTO members themselves in setting an acceptable and feasible agenda, the poor organization and chairmanship of the conference, the clash of cultures, and the clash of interests on the substantive aspects.

Doha and beyond

Given the above analysis, little needs to be said about the new round just launched November 9-14, 2001 at Doha. The dramatic change in context is clear.

Shortly after Seattle, the U.S. economy ran into severe head winds. The economy slowed down, the bursting of the dot.com bubble and the emergence of severe over-capacity in several technology sectors, including computer chips and fibre optics, triggered an equity market downturn and a sharp decline in business and consumer confidence.

The external pressures on the United States continued to be large with the current account deficit declining only marginally during the recession year of 2001 (to US$417.4 billion, down from US$444.7 billion in 2000), in contrast to previous recession years when the United States external balances swung into surplus (including in 1975, in 1980-81 and in 1991). The expected economic recovery over the course of 2002 and beyond would not tend to ease these pressures.

At the same time, the continued rise of the U.S. dollar has left it highly valued in comparison to most global currencies although not necessarily vis-à-vis the two major ones—the yen and euro. This poses difficulties for a monetary fix to the external balances of the G3: to correct the massive U.S. current account deficit would require a substantially lower valuation for

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Meanwhile, China had taken Japan's place as the object of American geopolitical (if not yet geoeconomic) concern.

the dollar, but with Japan mired in recession and Europe's economy grinding to a standstill, sharply higher valuations for the yen and euro would work to choke growth in those quarters. In fact, the situation in late 2001 was not unlike the early 1990s when there also was no easy currency fix to the set of external imbalances within the G3.

A domestic solution to the U.S. external imbalance (i.e., a sharp increase in domestic savings) also seemed not to be imminent. The United States was expected to go into deficit on the fiscal accounts in 2002 and for at least several years into the future. For its part, the household sector was helping to carry the economy by converting housing equity into debt. This would leave it to the corporate sector with weak short-term earnings prospects to become a net saver to restore balance to the external accounts. There is no precedent for such a configuration of savings-investment relationships.

Accordingly, as the Doha meetings approached, trade offered a more promising route to resolving problems on the external accounts—difficult as this might be to achieve in a multilateral trade agreement that involves give and take.

By itself, however, the changed economic situation in the United States may not have been sufficient to create launch conditions. For many months, as the preparations for Doha progressed, the key contextual elements from Seattle remained largely in place. Most importantly, the United States and the European Union remained divided concerning the scope of a new round. For their part, the developing countries remained sceptical about the benefits that they had achieved in previous deals, as well as about what they stood to gain in any round of expanded negotiations. Also, the violence surrounding street opposition to further trade liberalization escalated progressively from the Quebec City Summit of the Americas (May 2001), to the U.S.-EU Summit in Göteborg (June 1971), and the G7/8 Summit in Genoa (July 1971), where the first fatality of what might be termed the "trade intifada" was recorded.

From a trade policy perspective, why Doha should succeed where Seattle had failed was therefore not especially evident during the preparatory phase. Indeed, it is fair to say that expectations were shifting toward the accession of China and Taiwan being the biggest gain for the global trading system from the Doha meeting.

The rather bleak prospects for the launch of a new round of trade negotiations received, however, a boost from an unexpected source: the September 11 attacks on the World Trade Center and the Pentagon.

At least in the short term, the attacks raised the cost of doing international business[42] at a time when trade was already slumping sharply due to a synchronized economic slowdown in the major industrialized economies.[43] Moreover, the attack on the World Trade Center (if not the attack on the Pentagon and the unknown other target) represented to some extent an attack on globalization itself. In this context, a newfound sense of urgency concerning the Doha outcome thus emerged—a launch was needed if only to send to consumers and markets a signal of confidence in the globalized economy and to dispel the shadow of Seattle.[44] Success at Doha was, thus, in many ways the product of the political imperative to have a success.

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[42] Work by the Organization for Economic Cooperation and Development (OECD) Trade Committee and others indicates that the increase in frictional costs of trade was largely offset by the ensuing decline in the price of oil, which cut transportation costs. However, there was a palpable increase in time (and variability) of goods and businesspersons to transit borders, as well as a severe short-term contraction of the airline and tourism industries. One of the many reasons for reduced passenger volumes in the weeks following the attacks was a straightforward quantity response to an increase in the real price of travel, taking into account not just the financial costs but also the time costs. This had negative implications for trade, since less travel probably equates, at least in the short term, with less business. Moreover, higher border transit costs increased the effective protection from import competition for domestic production. For the most part, the negative impacts appear to be transitory; markets have shown much resilience.

[43] The growth of trade was projected to slow to only 2 percent in 2001 from 12 percent in 2000. See the *WTO Annual Report*, 2001.

[44] For example, Guy de Jonquières writing just prior to the WTO ministerial meeting reported that "The economic damage inflicted by the September 11 attacks in the U.S. has galvanized efforts to launch a global

What, then, might be said about the foreseeable future in terms of the conditions for negotiating success of the multilateral trade negotiations now under way?

First, given the circumstances surrounding its launch, and in particular the role of geopolitics in providing the decisive impetus, the Doha Round resembles most closely the Dillon Round. Given the modest trade policy success recorded in that round, this is not propitious in the narrow trade policy sense.

From this perspective, the new round can therefore be expected to be one of the most difficult ever, with only modest negotiating success at the end.

Summary and Conclusions

The postwar era was a period in which the lessons of the destructiveness of the wave of protectionism in the interwar period remained vivid. A series of multilateral rounds of liberalization of trade and international payments were launched in rapid succession in the late 1940s and through the 1950s. Pressures for protectionism were, in the normal course, mostly ignored (with some notable exceptions, as in the case of agriculture).

By the late 1950s, success was being declared by many: the international trade and payments system was back to functioning soundly. Trade policy experts set out and discussed, largely among themselves, the major issues that still needed to be addressed. However, forward movement on these would be had only when economic pressures and geopolitical or geoeconomic reasons dictated.

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trade round—so much so, that many diplomats now think a deal can be done in Doha." See "Dealing in Doha," *Financial Times*, November 6, 2001, p. 14. See also, "WTO seen pressured to launch talks," *The Globe and Mail*, November 1, 2001, p. B7. Speaking before the Council on Foreign Relations on October 30, 2001, USTR Robert Zoellick emphasized the linkage: "The events of September 11 have set the stage for our work, just as officials meeting in Geneva 54 years ago needed to consider the imperatives of their time."

Toward the end of the Bretton Woods era, balance of payments pressures on the United States resulted in a slew of policy actions aimed at stemming an outflow of reserves. Some of these were trade restrictive, setting a pattern for the coming decades. At the same time, the external pressures provided the impetus to move forward on trade.

After the breakdown of the Bretton Woods system in the early 1970s, the focal point for financial pressures shifted from the balance of payments to exchange rate alignments. As has been recounted above, trade and finance did not always, or even often, work hand-in-hand to create a seamless globalized market, but rather, disjuncture in one repeatedly created intolerable pressures in the other. The waxing of financial pressures worked to prompt the launching or closure of trade rounds; the waning of financial pressures led to frequent hiatus in negotiations, or to the protraction of existing negotiations.

This discussion raises interesting questions about the observed need for round after round of trade liberalization. Trade practitioners argue on the basis of the "bicycle theory": constant liberalization is required if the international community is not to see erosion of past gains in liberalization. The essence of this analogy has been captured in economic theoretic terms by Hoekman and Kostecki, who observe that, given the presence of rent-seekers, governments not being committed to *laissez-faire* and imperfect markets, one country can gain welfare at the expense of others by imposing negative externalities on them. The market solution to this is based, as they demonstrate, on the Coase Theorem, which holds that, given enforceable property rights and in the absence of transaction costs, such externalities will be bargained away to yield a Pareto-optimal outcome. In other words, the emergence of an institutional framework for trade negotiations is a market response to imperfections in the global economy that allow the imposition of negative externalities by some countries on others.[45] There is no state of rest or equilibrium in this system as long as new sources of externalities or new opportunities to exploit old externalities present themselves to economic agents. This means that the focus of negotiations must also shift.

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[45] For a discussion see Hoekman and Kostecki, op. cit., Chapter 3.

Interpreting the historical review in light of this theory, the process of trade liberalization in the postwar era is seen to have been propelled by the same factor that repeatedly generated financial crises in the postwar era: the perpetual frictions between trade and the broader financial context, which provided both the opportunity and the pressures for countries under pressure in one area or another to impose externalities on others. The shift from the "traditional" agenda of tariffs to the "new" agenda of inside-the-border measures is thus simply a reflection that the means of exploiting externalities had shifted from the tariff to other measures.

One way or the other, the understanding of the process of trade liberalization of the postwar era as principled trade policy driving efficiency-generating domestic economic adjustment, while perfecting an international rules-based system, cannot be seen as the whole story: broader economic issues of the day weighed heavily in determining outcomes, at least from the 1950s onward.

The Nuanced Case for the Doha Round[*]

John M. Curtis and Dan Ciuriak

Introduction

In the stocktaking that followed the failure of the Third Ministerial Meeting of the World Trade Organization (WTO) in Seattle in December 1999, the strength of the case for a new multilateral round of trade negotiations was questioned.[1] Certainly, the preparedness of both developed and developing countries to walk away from the Seattle meetings without an agreement did not suggest conviction that benefits too big to pass up had been left behind on the negotiating table.

While the hurdles that had proved to be insurmountable at Seattle were overcome at Doha, where a new round of multilateral trade negotiations was launched, the main reason for success had less to do with the positive case for trade than the political imperative of dealing with a series of adverse events.[2]

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[*] The views expressed in this paper are those of the authors and are not to be attributed to the Department of Foreign Affairs and International Trade or the Government of Canada. The research assistance and comments of Shenjie Chen and Konstantin Loukine in compiling the empirical analysis of the gains of trade from a new round is gratefully acknowledged.

[1] For a discussion, see Dan Ciuriak, "The Case for a New Round: Has It Been Made?" in *Trade Policy Research 2001* (Ottawa: Department of Foreign Affairs and International Trade, May 2001).

[2] For a discussion of how the agreement at Doha was forged see the opening chapter in this volume, Daniel Drache and Sylvia Ostry, "From Doha to Kannanaskis: The Future of the World Trading System and the Crisis of Governance", pp. 1-31. For a discussion of the changes in the economic context that worked to facilitate a launch at Doha, see John M. Curtis, "The Role of Contextual Factors in the Launching of Trade Rounds", pp. 32-69.

Agreement to launch a round is only the first hurdle to further trade liberalization. In the coming months and years, as the negotiations and work programs advance, the major hurdle will become creating a political consensus on the need for a successful conclusion to enable the tradeoffs that are usually necessary to structure a deal. The development of a powerful and compelling case for a deal will become a major priority for the trade policy community.

What can be said at this time about the gains from further, comprehensive liberalization? What, in effect, is the substantive case for the Doha Round?

Updating the context for liberalization

The progressive liberalization and accompanying expansion of trade and investment in the second half of the 20th century has fundamentally altered the context for trade policy. Accordingly, it will be helpful to consider where the starting line is with respect to the new round.

The starting point is a comparatively open trading system

First, as a result of eight multilateral rounds and the still deeper liberalization within the major economic zones through regional trade agreements, it can be safely declared that the destructive disruption of trade and other international economic activity by two world wars and the erection of trade barriers in the 1930s has been reversed. Trade growth has substantially exceeded growth in economic activity for decades. The degree of openness of the global economy is again approximating that which was reached at the previous height of globalization in the period prior to WW1.

Second, the understanding that trade is a vital part of a modern economy has taken firm root: the idea of self-sufficiency is not even used as a straw man any more. Thus, while protectionist pressures routinely emerge, accommodation thereof is the exception rather than the rule. The large majority of UN member states are now WTO members and about 30 applicants wait in line. Moreover, many nations are members of even deeper regional free trade arrangements, with the result that the majority of cross-border trade is conducted under conditions of more or less free trade. In short, trade is accepted as an essential part of economic development to an unprecedented extent.

Third, a rules-based trading system has been created, progressively strengthened, and is not only up and running but arguably running quite well. The volume of trade that is subject to disputes is minuscule compared to the volume that isn't.

The case to be made today, therefore, is not so much the case for trade or for a rules-based system *per se*, as for improving at the margin a system with which we have had a certain amount of experience and which is working tolerably well, and for making an already quite open global economy a bit more open.

The political economy of liberalization has changed as the degree of openness has increased

The increase in the degree of openness of the industrialized world, of the emerging markets, and of many developing countries has changed the political economy of further liberalization quite fundamentally.

In the first instance, in the process of getting to the present state of openness, the potential gains from trade, as identified in trade theory, have to a significant extent probably been realized.[3] For the more liberalized economies, the inevitable point of eventually diminishing returns to openness may well have been reached, meaning the benefit-cost ratio is lower than at the start of previous rounds.[4]

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[3] This most likely even includes the potential gains from trade in sectors that have not yet been liberalized. For example, trade theory suggests that the structural adjustment in liberalized sectors can result in a structural adjustment in non-liberalized sectors. In highly open economies, where most sectors are already open, the potential gains from trade from liberalizing the remaining closed sector may therefore have already have been extracted. For a discussion of this issue in the context of services trade, see Brian R. Copeland, "Benefits and costs of trade and investment liberalization in services: Implications from trade theory," in the present volume.

Second, since liberalization arguably proceeded fastest where trade-related issues were least significant, the remaining areas subject to liberalization are likely to pose the most challenging side issues.

In this regard, it is important to remember that, in the postwar period, liberalization affected, for the most part, industrial commodities produced by urbanized workers with narrow industrial skills that could be acquired in comparatively short intensive training. "Structural adjustment" meant a change of jobs but not necessarily a change of home or community. The impact on families was mostly incremental. The main pain was concentrated in smaller isolated communities, particularly those associated with primary resources where alternative employment and income sources were hard to come by.

By contrast, liberalization in the near and medium term deals with agriculture, which remains primarily a family farm business worldwide. The farmer's skill set is wide, and farming is an art as much as a science. It cannot be easily taught, and generational replacement is an issue. The setting is rural with limited off-farm employment opportunities: in this context, structural adjustment uproots families. The social consequences are narrower but much deeper, particularly inter-generationally.

Equally importantly, the subject matter of agriculture is biology not mechanics. Biological organisms and ecosystems are much less well-understood than are machines, and the consequences of change that impacts on these areas are not foreseeable. Typically, the wealthier a society becomes, the more it values safety and the less concerned it is about the price of food.[5] Simply put, the trade-offs between market and non-market considerations in agriculture appear to be different than in other areas.

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[4] For a discussion of this possibility, see John F. Helliwell, *Globalization: Myths, Fact and Consequences*, Benefactors Lecture, 2000, C.D. Howe Institute, October 2000.

[5] An increase in the price of rice causes riots in Asian developing countries but we have not seen Europeans, U.S citizens or Canadians going en masse into the streets about higher food prices (nor are we likely to if the

In the second major area of the new agenda, trade in services, there is a plethora of trade-related issues that have only limited commonality with one another let alone with goods trade issues, which considerably complicates the development of accepted regulatory norms for openness. In merchandise trade, moving from children's toys to cars or steel rod raises new regulatory issues. However, the distance one moves conceptually is less than moving from health to financial services or to what we Canadians and a number of our friends call the cultural industries. A service often cannot be separated easily from the person delivering it; dealing with regulation of people and of the processes involved in delivering the services is a lot more complex than dealing with regulation of goods. Perhaps most importantly, political economy choices by many countries have kept market economics out of many areas of social services. Liberalization in these cases is not an instance of opening up markets where they exist, but creating markets where they do not exist, a radically different proposition.[6]

Third, most liberalization in the past occurred between advanced, industrialized countries with reasonably well-developed political and social frameworks to deal, however imperfectly, with the questions of who gains from trade within a country, who loses, and how to handle compensation, adjustment and transition. Now liberalization is being widely embraced within the group of developing countries, many of which lack these frameworks.

Moreover, aggressive liberalization by developing countries hoping to achieve economic miracles à la East Asia involves telescoping into a few decades changes that the already

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issue were to be, for example, higher meat prices as the consequence of measures taken with respect to risks such as mad cow disease etc.).

[6] For a thorough discussion of the complexities of services trade from an economic theoretical perspective see: Brian R. Copeland, "Benefits and costs of trade and investment liberalization in services: Implications from trade theory," in the present volume.

industrialized countries absorbed over a number of generations. Since development itself is an evolutionary process that is still poorly understood, attempts at policy reform/liberalization have often failed, with severe welfare costs to the populations of these countries. This has had repercussions in the industrialized world insofar as civil society organizations have risen to plead the case of those who have been affected, and to criticize the positive and political economics of global capitalism or "globalization" which they hold responsible for these failures and with which the multilateral trading system is strongly identified.

The mechanisms and processes developed to deal with liberalization of industrial goods between industrialized countries may have little relevance to the new issues. Moreover, some of the techniques used to pry industrial goods liberalization out of reluctant legislatures (e.g. the production of *fait accompli* agreements negotiated in secret), which might have made sense in the context of previous rounds that dealt primarily with opening up existing industrial markets, may be counterproductive in the new context.

It is interesting to note that all the trade policy gains in the postwar era (up to and including the Uruguay Round) were realized without noisy opposition in the streets.[7] Equally notably, all further liberalization attempts since the Uruguay Round have met with more generalized opposition.[8] Given the considerations raised above, the emergence of the notion that the trade negotiation process embodies the "democratic deficit" is more likely to reflect the change in the issues being addressed by trade policy than a rebirth of protectionist sentiment in populations. In other words, a political-economy nerve has recently been hit that was not being hit before.

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[7] At least not generalized noisy opposition: individual sectors whose interests were threatened in past negotiations were certainly out in force at times during the Uruguay Round and earlier—including Canadian farmers demonstrating on Parliament Hill in 1992.

[8] These include the OECD initiative to create a Multilateral Agreement on Investment (MAI), APEC's Early Voluntary Sectoral Liberalization (EVSL) initiative and the aborted launch of a new round of multilateral trade negotiations at the third WTO ministerial meeting in Seattle.

And the global economic context has evolved

The world has also changed substantially over the past several decades, in part because of the liberalization of trade and investment but for many other reasons as well. Several of these changes are salient for the updated case for trade liberalization.

First, the industrialized countries today, after two decades of supply-side policy, are very different in economic terms than they were at the end of the 1970s following two decades of applied Keynesian demand-management policies. One piece of substantiation for this claim is the nature of the synchronized economic downturn in 2000-2001. As has been noted in many commentaries, this downturn bears greater resemblance to the recessions of the 19th Century, which were triggered by over-investment in a context of very low inflation, than to the recessions of the latter half of the 20th Century, which, for the most part, were triggered by monetary policy restraint to curtail inflationary pressures caused by demand pressures.

Since trade liberalization generates economic growth by increasing efficiency, it was a more powerful tool when the problem facing industrialized economies was excess demand than it is now when the problem is one of excess supply. Moreover, insofar as the policy pendulum swing to the distributional, import-replacement and industrial policies that characterized the 1960s and 1970s was a reaction to the nature of earlier supply-side recessions, the return to supply-side recessions suggests that the headwinds facing liberalization may be stronger now than they have been for some time.

Second, the technological changes that have been driving down the frictional costs of trade (including transportation and communications costs) have also quietly been working to stimulate trade and investment, quite apart from policy change. Given the difficulty of disentangling the effects, it is quite possible that some of the past gains that have been attributed to trade policy have in fact derived from technological change.

Since the frictional costs of trade have been reduced to very low levels as a percentage of the cost of traded goods and services (which accounts in good measure for the comparatively modest impact on trade from the September 11th attacks, which caused frictional costs to rise sharply), their ability to compound gains in trade from policy liberalization appears to have been largely spent. The waning of the gains from this source may be interpreted as reflecting a waning efficacy of trade policy, weakening support for it. For this reason as well, trade policy may be a tougher sell now than it has been for some time.

The empirical case for further gains from trade liberalization

Perhaps the first question to resolve in making the case for further trade liberalization is: What are the commercial gains? Commercial gains are, after all, the immediate objective of trade liberalization; it is to be presumed that, without significant gains in this area, trade liberalization can have little leverage on any related issue.

In theory, the gains from trade liberalization are reflected in increased economic welfare; these gains can be decomposed according to their sources in a general equilibrium framework:

(a) More efficient allocation of factors of production (labour and capital), as predicted by standard trade theory.

(b) Changes in the terms of trade. For individual countries, these can play an important role in determining the net gains from liberalization. World prices change most for those sectors where trade barriers fall the most. Those countries that are net exporters of products that experience price increases enjoy increasing terms of trade, as the world prices of their exports rise relative to the prices of their imports. The reverse occurs for countries specialized in industries where prices fall.

In the standard, static models based on perfectly competitive markets, these are the sources of the gains/losses from trade liberalization. In models that allow for capital flows between regions, two other sources of gain/loss enter into the calculation:

(c) Welfare gains/losses associated with net capital flows due to changes in relative attractiveness of investment domestically vis-à-vis in other parts of the world. Removal of restrictions on foreign investment can divert capital to countries that previously had relatively high barriers to investment.

(d) Changes in rents earned on foreign direct investment (FDI). Barriers to entry generate rents, some of which accrue to owners of foreign capital. With liberalization, these rents are eroded by competition; thus countries that are important sources of foreign direct investment can lose rental income from liberalization by capital importing countries.

Some models relax the assumption of perfectly competitive markets and constant returns to scale and allow for varying degrees of imperfect competition. These models capture two additional effects from trade liberalization:

(e) Economies of scale effects from production increases arising from trade expansion induced by liberalization.

(f) Reduction of excess profit margins: in imperfectly competitive markets, firms have some degree of market power and thus can markup prices over cost, introducing some monopoly profits into the income accounting (these would be greatest under conditions of pure monopoly, less under oligopolies where there are several large firms, and still less under monopolistic competition where a large number of firms have some degree of market power because of differentiated products). Trade liberalization, by reducing observed markups generates additional economic welfare.

Increasingly, models also build in features that capture some elements of the dynamic impacts of trade expansion on the economy which are thought to be one of the sources of the stronger apparent correlation between trade and growth than the standard general equilibrium models can validate. These effects include:

(g) Capital accumulation driven by the increased savings and investment arising from static gains from trade.

(h) Increased productivity growth: Increased competition can spur innovation that in turn generates productivity growth or that results in additional capital accumulation.

Finally, it should be noted that there is a source of gains from trade that equilibrium models normally do not capture: namely, the dynamic gains that would be associated with increased utilization of resources in economies which are in disequilibrium, where factors of production are not fully utilized and where there is considerable potential demand that is not met due to weak economic performance.[9]

While consideration of the possibility that diminishing returns to openness in already highly open economies such as those within the OECD suggests that the dynamic gains from trade may be lower now than they were during the period on which estimates of the relationship between trade and productivity growth are based, the same is not true of the developing countries that have ample room to expand trade and to garner the dynamic benefits. Insofar as the main gains from trade from the Doha Round are likely to come from north-south flows, the dynamic gains may still be quite large.

A survey of empirical estimates of gains from a new round

Against this background, it is useful to consider the results of empirical studies of the remaining gains from multilateral trade liberalization. Most such studies use general equilibrium models. Due to differences in the structure of the various models that have been used for these purposes, which reflect the efforts of the model builders to capture more realistically particular linkages within and between national economies, the results are rarely directly comparable. Nonetheless, these studies furnish an important starting point for consideration of the possible impacts of further trade liberalization.

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[9] For example, tens of millions of people go hungry every day, not because the world economy cannot produce enough food, but because they do not have the incomes to pay for it—i.e. their demand for food is not, in economic jargon, "effective demand". In such conditions, the stimulus from new trade can have powerful multiplier effects throughout the economy.

Brown, Deardorff and Stern (2001)

A recent study that suggests comparatively large income gains from post-Uruguay Round trade liberalization comes from Brown, Deardorff and Stern.[10] They use the University of Michigan General Equilibrium Model of World Production and Trade (20 countries/18 sectors), which is based on the 1995 Global Trade Analysis Project (GTAP) database. This model features monopolistic competition, product differentiation and increasing returns to scale in the industrial goods and services sectors while retaining a perfectly competitive model for agriculture. To model services sector liberalization, these researchers use estimates of the size of barriers to services trade in a given country based on the difference between gross operating margins of firms in its service sector and the lowest gross operating margin found worldwide, which is assumed to approximate the free trade norm.[11]

This study arrives at a figure for potential gains in world welfare of almost US$1.9 trillion from full liberalization.[12] Of these global gains, almost two-thirds derive from services trade liberalization, with the gains from liberalization going predominantly to the industrialized countries.

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[10] Drusilla K. Brown, Alan V. Deardorff, and Robert M. Stern (2001) "CGE modelling and analysis of multilateral and regional negotiating options." *Discussion Paper No. 468*, University of Michigan.

[11] These estimates were drawn from Bernard Hoekman "The Next Round of Services Negotiations: identifying Priorities and Options", *Federal Reserve Bank of St. Louis Review* 82:31-47.

[12] The income gains in this study are expressed in terms of equivalent variation (which is defined as the amount of money that, if given to consumers at initial prices, would be equivalent to the gain they stand to make from liberalization). The results are presented in 1995 prices, scaled up to be consistent with income levels in 2005, based on an average annual average global income growth rate of 2.5 percent between 1995 and 2005.

The gains from trade estimated in this model are entirely static, there being no capital accumulation or boost to productivity. Moreover, since there are no inter-regional movements of labour or capital, and since trade balances are fixed (i.e., set at the 1995 level), the distribution of gains/losses internationally are entirely the result of changes in the microeconomic structure of each economy induced by liberalization. Because of the absence of dynamic gains, the authors suggest that their results should be considered a lower bound for the size of the overall gains from trade liberalization.

World Bank (2001)

Another recent study that projects comparatively large potential income gains from a new round comes from the World Bank.[13] The simulations are run on the LINKAGE model (15 countries and 20 sectors), which is based on the updated 1997 GTAP data set. The model features constant returns to scale and perfect competition. Non-competitive pricing is allowed for, however, through an exogenous price markup. Moreover, the model incorporates two dynamic features: capital accumulation and productivity growth stimulated by increases in the degree of openness as measured by the sum of exports plus imports as a share of GDP. Finally, the model introduces a time dimension as it is solved forward as a series of linked equilibria; this allows the researchers to generate a time path for income gains under alternative liberalization scenarios.

The World Bank puts forward two scenarios, one with and one without the productivity response to increased trade. The reasonableness of the estimate in the latter scenario depends in the first instance on the reasonableness of the assumed responsiveness of productivity to increased openness.[14]

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[13] See World Bank, *Global Economic Prospects and the Developing Countries 2002: Making Trade Work for the World's Poor* (Washington D.C.: World Bank, 2001). The discussion of the impact of further trade liberalization is set out in Chapter 6, "Envisioning Alternative Futures: Reshaping Global Trade Architecture for Development".

In the first scenario, global income is estimated to be US$355 billion higher in 2015 than in the base case; in the second scenario, the income gain is US$832 billion over the base case.[15] Notably, these gains are limited to those derived from liberalization of industrial goods and agriculture trade alone, with the income gains from agricultural trade liberalization accounting for 70 percent of the total, in both the static and dynamic scenarios.

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[14] The World Bank model breaks down sectoral productivity growth into three components, only one part of which is influenced by openness. Assumptions concerning two parameters are key to the results. The first of these parameters determines how big is the portion of sectoral productivity growth that is influenced by liberalization. In its main results, the World Bank sets this portion at 40 percent, a choice that appears to be have been made based on a judgment by the study's authors as to what is reasonable. The second key parameter is the degree of response of productivity growth to increased openness. In its main results, the World Bank uses an elasticity of one to transmit the effect of increased openness. Empirical support for an elasticity of approximately unity is adduced based on relationships between openness and growth estimated in Sébastien Dessus, Kiichiro Fukasaku, and Raed Safadi, "Multilateral Tariff Liberalisation and the Developing Countries", *Policy Brief No. 18*, (Paris: OECD Development Centre, Paris). The methodology for calculating the dynamic productivity gain is described in endnote 21 of the World Bank study. Table 6.2 at p. 171 of the study provides estimates of the gains with different assumptions about the elasticity and the share of sectoral productivity that is affected by liberalization. The range of gains is from US$355 billion with no productivity stimulus, to US$832 billion with assumptions of 40 percent of sectoral productivity growth being influenced by openness and an elasticity of 1.0 for the productivity gains; and to as much as US$1.34 trillion with assumptions of 80 percent and 1.5 for these two parameters.

One might note in this regard that causality could easily run in both directions: that is, imports of capital equipment or producer services may increase productivity; conversely, increases in productivity due to domestic policies (e.g., improved education, government investment in economic infrastructure) that create exportable surpluses might lead to greater exports that in turn provide the wherewithal to finance imports. When a country has successful strategies, productivity increases go hand-in-hand with increased openness and causality can be hard to sort out.

[15] These gains are measured in terms of equivalent variation, at 1997 prices, scaled to the size of global income in 2015.

The World Bank also provides an estimate of the gains from services trade liberalization, but only for developing countries. Here the World Bank study proceeds by assuming that services trade liberalization effectively removes three things:

(a) a "cost penalty" of 10 percent, which reflects the inefficiency of firms operating as monopolies or under protection from outside competition;
(b) a price markup over average cost of 10 percent, which also reflects the weakness of domestic competition; and
(c) a "trade penalty" of 10 percent, which is a tariff equivalent.

Given reforms that remove these three "penalties" simultaneously, developing country income is boosted by some US$884 billion (in terms of income levels in 2015). Adding this possible increase in income to the total gains from liberalization of goods and agriculture trade as per the dynamic scenario raises the total gains in 2015 from full liberalization to US$1.7 trillion—without even taking into account gains from services liberalization in the developed countries.

The final noteworthy feature of the World Bank simulations is that the time path for liberalization is modeled by solving the model sequentially from a post-Uruguay Round data set in 2005 forward to 2015. In its full liberalization scenario, the World Bank reduces protection by one-sixth in each year from 2005 to 2010; completion of the adjustment to these reductions takes place over the period 2011-2015. The increments to global income thus can be assessed in each year. Added up and reported in present value terms as of 2005 (using a real discount rate of 1.5 percent), the cumulated additional income in the first scenario amounts to US$1.5 trillion to the developing countries alone, and US$2.8 trillion globally.

Dee and Hanslow (2000)

While the above studies provide some benchmarks for comparatively high estimates of the gains from further liberalization, Dee and Hanslow project the world as a whole to be better off by only about US$260 billion annually as a result of eliminating all post-Uruguay Round trade barriers.[16]

These researchers use the FTAP general equilibrium model, which is based on the 1995 GTAP data set, updated to reflect the Uruguay Round's removal of some of the barriers to trade. The model introduces bilateral foreign direct investment and capital accumulation, which adds some dynamic effects into the results. One feature of the way in which capital flows are modeled is that capital shifts more readily between economies within a given sector than across different sectors within a given economy. A second feature of this study is that it deploys a newly developed set of estimates of barriers to trade in services,[17] and distinguishes between barriers to entry in services through FDI versus barriers affecting other modes of services delivery. The latter feature allows this empirical study to illustrate certain features of liberalization suggested by theory, namely that (a) liberalizing some channels of services delivery but not others creates distortions that can actually worsen real incomes; and (b) some countries that invest in services industries abroad lose rents when these foreign countries liberalize their services sectors.

Of the total US$260 billion of income gains projected by Dee and Hanslow, about US$50 billion comes from agricultural trade liberalization and US$80 billion from the liberalization of manufactured products. As in the World Bank and Brown-Deardorff-Stern studies, the largest gains come from services trade liberalization. However, Dee and Hanslow put the gains here at a comparatively modest additional US$130 billion.

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[16] See Philippa Dee and Kevin Hanslow, "Multilateral Liberalization of Services Trade," Productivity Commission Staff Research Paper, Ausinfo, Canberra (2000).

[17] These estimates are based on results of studies on banking and telecommunications services. Dee and Hanslow model the barriers to trade as markups of prices over costs. Liberalization accordingly removes rents.

Hertel (2000)

Thomas Hertel used the standard GTAP model, based on the 1995 GTAP data set, aggregated into 19 regions and 22 sectors, and scaled to a 2005 income base to model post-Uruguay Round liberalization.[18] The model has a standard structure, assuming constant returns to scale and perfect competition.

One notable feature of the simulations reported here is that the standard GTAP trade elasticities were doubled; this was done in part because historical simulations tracked actual developments better with higher elasticities and in part because of the longer time frame contemplated in this scenario (10+ years versus the usual 3-5 years on which the medium-term elasticities were based).[19] Hertel reports that doubling the elasticities approximately doubles the size of the gains.

A second notable feature of Hertel's estimates is that the barriers to services trade are modeled quite differently than in Dee and Hanslow. Hertel models protection as raising costs to the foreign firm seeking to enter the domestic market. Liberalization is then modeled as a change that reduces the cost of imports by the equivalent amount. As Dee and Hanslow point out, this approach to modeling protection tends to yield larger measures of economic welfare gain than modeling protection as enabling domestic firms to earn rents. At the same time, Hertel applies this approach only to the construction and business and financial services sectors.

The gains are estimated by Hertel to be US$350 billion, with the major contributions deriving from the liberalization of agriculture (US$164 billion), manufacturing (US$130) and services (US$55 billion), in that order.

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[18] Thomas Hertel, "Potential Gains from Reducing Trade Barriers in Manufacturing, Services and Agriculture," 24th Annual Economic Policy Conference, Federal Reserve Bank of St. Louis, Oct. 21-22, 1999.

[19] See Hertel, op. cit., p. 82, footnote 7; and also discussion on p. 90.

Francois (2001)

Joseph Francois uses the GTAP model (aggregated to 9 countries and 19 sectors) to examine the impacts of a new round. [20] The model is based on the 1995 GTAP data set, updated to reflect post-Uruguay Round levels of protection. The model allows for capital accumulation, scale economies and imperfect competition. Services barriers are modeled as raising costs to the exporting firm.

The study takes into explicit account the following issues:

(a) the fact that the bound tariffs which are under negotiation in the round are substantially higher than applied tariffs in many developing countries (which can result in overstated impacts under partial liberalization scenarios);

(b) market structure matters: gains under liberalization are smaller where firms have increased market power.

Francois' results (presented in 1995 prices and calibrated to 1995 income levels) suggest global income gains between US$175 billion and US$385 billion, annually, for a 50 percent reduction in protection, split more or less evenly between developed and developing countries, with about two-thirds of the gains coming from reductions in tariffs on industrial goods.

Comparing the results

In summary, one can point to a number of studies that predict that post-Uruguay Round trade liberalization will increase real global income.[21] However, there are obvious problems in interpreting this body of work because of the differences in models, differences in aggregation, differences in the data sets used to generate the simulations (including importantly differences in the measures of effective protection in the services sector), as well as differences in the size of the global economy to which the results are calibrated. While a detailed reconciliation of the results is not possible, a few basic, if crude, adjustments to the reported results go a long way toward making them somewhat more comparable.

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[20] See Joseph Francois, *The Next WTO Round: North-South stakes in new market access negotiations* (Adelaide: Centre for International Economic Studies, University of Adelaide and Tinbergen Institute, the Netherlands, 2001).

[21] In addition to the five studies reviewed above, several other studies have suggested gains from further liberalization within the same range. For example, a study commissioned by the Australian Department of Foreign Affairs and Trade in 1999 suggested that full elimination of trade barriers would generate income gains totaling US$750 billion, with one-third of this coming from goods and agriculture trade liberalization and the two-thirds

Table 1 below summarizes the main results from the Brown-Deardorff-Stern (BDS), World Bank (WB), Hertel, Dee-Hanslow (DH) and Francois studies for liberalization of industrial products, agriculture and services separately (we include the breakdowns provided by the studies for services liberalization gains by developing and developed countries separately). We focus on the scenarios for full liberalization where these are available (only the Francois study does not provide a simulation for full liberalization), and ignore other elements of these studies (i.e., interactions between liberalization in the different sectors, which tend to affect the

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from services trade liberalization. See Department of Foreign Affairs and Trade, *Global Trade Reform: Maintaining Momentum* (Commonwealth of Australia, 1999); available at http://www.dfat.gov.au. A study by Nigel Nagarajan projected gains of US$400 billion, with the gains obtaining from trade facilitation and across-the-board tariff reduction; plus an additional US$85 billion from an agreement on competition. Nigel Nagarajan, "The Millennium Round: An Economic Appraisal," Economic Papers No. 139, European Commission, DG for Economic and Financial Affairs, November 1999. Finally an OECD study that examined liberalization of industrial and agricultural products only reported very small results for simulations without productivity-enhancing effects from openness (US$82 billion in 1995 prices, equivalent to 0.2 percent of 2010 incomes); but quite substantial gains, US$1.2 trillion, equivalent to 3.1 percent of global incomes, in 2010, when dynamic productivity effects were introduced. See Sébastien Dessus, Kiichiro Fukasaku, and Raed Safadi, "Multilateral Tariff Liberalisation and the Developing Countries", *Policy Brief No. 18*, (Paris: OECD Development Centre, Paris). This latter study used the OECD's Trade Policy Simulation Model, a modified version of the LINKAGE model that generated the World Bank results reported earlier; the OECD model was based on the 1995 GTAP data set.

totals somewhat, and additional effects such as possible gains from trade facilitation and competition policy, which the Francois study includes).

Table 1: Selected Empirical Estimates of the Income Gains from a new Round of Multilateral Trade Negotiations

	BDS	WB	Hertel	DH	Francois	
Income levels in:	2005	2015	2005	1995	1995	
Base year for prices:	1995	1997	1995	1995	1995	
					A	B
Goods	633	245	130	80	117	190
Agriculture	32	587	164	50	21	27
Services (Total)	1,224		55	133	42	63
- Industrial countries	988		40	-2	23	28
- Devel. countries	236	884	15	135	19	35
Total	1,889	1,716	349	263	180	279

Notes: (1) Totals are calculated from the individual elements and differ somewhat from the totals reported in the studies, which include interaction effects. (2) The World Bank results are taken from the scenario in which productivity responds to increased openness; the World Bank did not estimate gains from services trade liberalization in the industrialized countries. (3) The Dee-Hanslow figures for gains from liberalization of agriculture and industrial goods trade are taken from the text; in the tabular presentation, these results are combined and sum to US$133, slightly more than the rounded figures reported in the text and shown in the table above (4) For the Francois study, Column A reports the scenario based on oligopoly market structures and 50 percent reduction of applied rates. Column B reports the scenario based on monopolistic competition and 50 percent reduction of applied rates. The figures for services liberalization in the industrialized countries in the Francois scenarios are the sum for the United States, the European Union and Japan only. The "rest of the world" is lumped in with the developing country total. Accordingly the split shown here overstates somewhat the gains for developing countries from services liberalization since the totals for some of the smaller industrialized countries are buried here.

Based on the information provided in the studies, we scale back the results to 1995 prices and 1995 income levels. These data are shown in Table 2. This allows a calculation of the average results for liberalization within each of the sectors. Two averages are presented: the simple average of the estimates of liberalization in each of the sectors by the five studies and a

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corresponding set of averages discarding the high and low estimates for each sector.

Table 2: Standardized results based on 1995 prices and 1995 income levels, and averages

	BDS	WB	Her	DH	Fra	**Ave**	%of GDP	**Ex hi/lo**	% of GDP
Goods	495	122	88	80	307	**218**	0.8%	**172**	0.6%
Ag	25	292	111	50	48	**105**	0.4%	**70**	0.2%
Services	956		37	133	105	**377**	1.3%	**163**	0.6%
- Indust.	772		27	-2	51	**212**		**39**	
- devel..	184	439	10	135	54	**164**		**124**	
Total	1,476	853	237	263	459	**700**		**405**	
% of inc.	5.2%	3.0%	0.8%	0.9%	1.6%	**2.5%**		**1.4%**	

Source: Calculations by the authors. Notes: (1) The BDS estimates are scaled back to 1995 based on the 2.5 percent average annual income growth given in the study (at p. 6). The World Bank figures are scaled back to 1997 levels based on scaling factors kindly provided by Dominique van der Mensbrugghe of the World Bank. They are then scaled back to 1995 income levels and prices based on global growth between 1995 and 1997 and U.S. price growth over the same period. The Hertel estimates are scaled back to 1995 based on information supplied in Dee and Hanslow (see footnote 3, p. 17) in respect of a reconciliation of the DH results with Hertel's results for industrial products. For the Francois study, we take the average of the two scenarios and double the figures to roughly approximate full liberalization; since CGE model results tend to be roughly linear, these figures are probably not unrepresentative of the results for full liberalization from this model; however, these figures should be treated as notional.

The overall size of the remaining gains from trade (these are all notionally 100 percent liberalization scenarios) is quite modest. Measured in 1995 dollars and scaled to 1995 global income levels, full liberalization would generate US700 billion additional income (equivalent to about 2.5 percent of global GDP), if one takes the simple average of the gains for each sector from these five models. If one excludes the highest and lowest estimate for each sector, the average gain falls to a little over US$400 billion, equivalent to 1.4 percent of global GDP (the difference is largely the result of excluding the remarkably corresponding set of averages discarding the high and low estimates for each sector.

Table 2: Standardized results based on 1995 prices and 1995 income levels, and averages

	BDS	WB	Her	DH	Fra	**Ave**	%of GDP	**Ex hi/lo**	% of GDP
Goods	495	122	88	80	307	**218**	0.8%	**172**	0.6%
Ag	25	292	111	50	48	**105**	0.4%	**70**	0.2%
Services	956		37	133	105	**377**	1.3%	**163**	0.6%
- Indust.	772		27	-2	51	**212**		**39**	
- devel..	184	439	10	135	54	**164**		**124**	
Total	1,476	853	237	263	459	**700**		**405**	
% of inc.	5.2%	3.0%	0.8%	0.9%	1.6%	**2.5%**		**1.4%**	

Source: Calculations by the authors. Notes: (1) The BDS estimates are scaled back to 1995 based on the 2.5 percent average annual income growth given in the study (at p. 6). The World Bank figures are scaled back to 1997 levels based on scaling factors kindly provided by Dominique van der Mensbrugghe of the World Bank. They are then scaled back to 1995 income levels and prices based on global growth between 1995 and 1997 and U.S. price growth over the same period. The Hertel estimates are scaled back to 1995 based on information supplied in Dee and Hanslow (see footnote 3, p. 17) in respect of a reconciliation of the DH results with Hertel's results for industrial products. For the Francois study, we take the average of the two scenarios and double the figures to roughly approximate full liberalization; since CGE model results tend to be roughly linear, these figures are probably not unrepresentative of the results for full liberalization from this model; however, these figures should be treated as notional.

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Scaled up to the context of the global economy in 2002 (projected by the IMF to be about US$31.9 trillion), the remaining potential gains from full liberalization would amount to about US$790 billion going by the higher average and a little over US$450 going by the more conservative average that excludes the outlier estimates. The extent of liberalization that will be achieved in the Doha Round will be a fraction of this amount.

Assessment of the results

How realistic are these estimates and what are their implications for the case for further trade liberalization?

First, with regard to goods trade, one set of questions concerns the post-Uruguay Round level of tariffs. Over the eight previous trade rounds, average tariffs were lowered from about 40 percent to less than 4 percent.[22] The World Bank estimates that the average tariff in high-income countries on imports from other high-income countries is only 0.8 percent and on imports from low-income countries is only 3.4 percent.[23] These low figures represent the average taken over a very large number of tariff items. For the large majority of products, duties range from small to negligible. A comparatively small number of items face intermediate tariffs that are neither trivial nor prohibitive (the vast majority of these now are in developing country tariff schedules). A small number of items face prohibitively high tariffs, including those facing intermediate tariffs within tariff rate quota (TRQ) limits and prohibitively high tariffs beyond those limits (most TRQs are in agriculture). The behavioural impact in changing trade flows by reducing small to negligible tariffs by some fraction is probably negligible. Similarly, reducing a prohibitively high tariff by, say, one-third may still leave the tariff prohibitively high and thus induce no trade response whatsoever. The bulk of the gains from trade in a new round derived from amendments to tariff schedules must therefore come from the comparatively small number of items facing intermediate tariffs, restrictive tariff rate quotas or tariff spikes. It is fair to conclude that, to have a quantitatively significant impact, the Doha Round will require deep and comprehensive cuts in effective protection.

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[22] These are representative figures, as cited in: European Commission, "A new round for harnessed, equitable globalization" (Brussels: European Commission, October 2001) p. 4

[23] Source: World Bank, *Global Economic Prospects 2001* (Washington D.C.: World Bank, 2001).

Second, the notion that there are major gains to be had from liberalization of agricultural trade finds little support from the studies surveyed above.

Third, tariff cuts agreed in the WTO are with respect to tariff bindings. Insofar as many developing countries that have high tariffs are operating well below their bound rates, cuts to bound rates have no behavioural implications either.[24] For example, India, which enters the current round with one of the higher tariff walls, bound 67 percent of its tariff lines in its Uruguay Round commitments, including all of its agricultural tariffs and 62 percent of its industrial tariffs. The ceiling bindings of 40 percent *ad valorem* for finished goods and 25 percent on intermediate goods, machinery and equipment, are to be phased in by 2005. However, already by fiscal year 1995-1996, India had unilaterally reduced its applied tariffs from a weighted average of 87 percent in FY1990-1991, when its structural reforms began, to 25 percent in FY1995-1996. At the same time, the peak rate of duty had fallen from 355 percent in

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[24] Joseph Francois has pointed out that past empirical studies have sometimes overstated the impact of liberalization by failing to take account of what he terms a "tariff binding overhang", namely the fact that bound tariffs are often well above applied tariffs and cuts to the bound rates (or introduction of bound rates at levels well above applied rates) have no impact on trade flows. See Joseph Francois, *The Next WTO Round: North-South stakes in new market access negotiations* (Adelaide: Centre for International Economic Studies, University of Adelaide and Tinbergen Institute, the Netherlands, 2001).

FY1990-1991 to only 50 percent by FY1995-1996.[25] As can be seen, India's unilateral liberalization proceeded much faster and went much deeper than was committed to in the WTO. This means that further liberalization in a new round of about 50 percent would be needed simply to lock in the current comparatively low tariff levels, and even deeper liberalization would be required to actually force applied rates down further.[26] Clearly, this will mean especially large reductions in bound tariffs within the developing countries in order for these reductions to actually constrain applied tariffs.

Fourth, the range of estimates of the gains from services sector liberalization is too great to allow meaningful conclusions to be drawn from these, still early, quantitative results (for example, as shown in Table 2 above, excluding outlier estimates changes the averages dramatically). Since the actual instruments of services protection are not modeled, a lot rests on the inferred levels of protection for different services sectors in the various economies and on still unresolved questions of how to model the protection. In short, this is the area where the estimates are most tenuous, where the results are to the greatest extent driven by the assumptions, and where the assumptions have the least amount of empirical validation.

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[25] See, Rajesh Chadha, Drusilla K. Brown, Alan V. Deardorff and Robert M. Stern, "Computational Analysis of the Impact on India of the Uruguay Round and the Forthcoming WTO Trade Negotiations," Working Paper 2001-2007, Tufts University 2001. This study found an economic welfare gain for India from the Uruguay Round of 1.1 percent of its projected GDP in 2005. The interesting question, given India's pace of unilateral liberalization, is whether the gains are properly attributable to the negotiated settlement. There is one specific area where the Uruguay Round settlement appears more clearly to have been instrumental; that is in accelerating elimination of quantity restrictions that India maintained on the justification of balance-of-payments concerns. Shortly after the formation of the WTO, a challenge to these quantity restrictions, led by the United States, was mounted in the WTO's Balance of Payments Committee and subsequently came before the Dispute Settlement Body. In a WTO Appellate Body Report, which was adopted by the Dispute Settlement Body on September 22, 1999, India's quantity restrictions were found to violate its commitments. As a result of this report, India entered into consultations and agreed to phase out its restrictions somewhat earlier than planned. See WTO Appellate Body Report: *India–Quantitative Restrictions on Imports of Agricultural, Textile and Industrial Products*, AB-19999-3, WT/DS90/AB/R (99-1329).

[26] There is one modest benefit from introducing new bindings at or above applied rates: this increases certainty about the possible range of future tariffs, since bindings make it more difficult for countries to resort to tariff increases to reduce external competitive pressures on particular industries. Reducing uncertainty is generally good for business planning so there may be a non-price effect associated with such bindings.

Fifth, the fact that most of the models surveyed here incorporate one or another feature(s) to pick up additional gains from trade implied by theory that the standard, static, perfectly competitive models do not, and/or to better replicate historical growth of trade (e.g., doubling the standard trade elasticities as some researchers have done), it is not clear how tenable it is to hold that there remain nonetheless very large gains still to be identified.[27]

Sixth, the results of the Uruguay Round are of some relevance in calibrating our expectations of what is realistic to expect from the Doha Round. Several recent studies arrive at comparatively low estimates for the economic welfare gains from that round. The Chadha et al. study puts the gains at US$160 billion in 2005, based on an expansion of trade of

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[27] This is especially the case if the weight of the argument that much remains unaccounted for comes to rest on total factor productivity (TFP). TFP is not itself a directly measured variable but an artifact of quantitative growth accounting—the unexplained residual after known contributions to growth have been accounted for. Moreover, it is product of the particular economic model and assumptions that underpins the growth accounting. For example, for given countries, it is a modeler's choice whether to constrain the model to constant returns to scale and obtain significant TPF contributions to growth or, by removing the constraint of constant returns, to allow the model to perhaps assign the growth to increasing returns. While it might be reasonable in this context to include an exogenous boost to productivity in models that assume constant returns, to do so in models that build in increasing returns and capital accumulation might well be to double-count.

US$148 billion or about 2 percent of global trade.[28] The Brown-Deardorff-Stern study cited earlier puts the gains at half that—only US$75 billion annually. Taking into account the scaling issues, these gains fall well short of those that would be projected for the Doha Round on the assumption of a one-third reduction in protection. In other words, studies of post-Uruguay Round trade liberalization tend to project substantially greater expansion of trade and GDP from a new round than probably was leveraged by the Uruguay Round. Given that liberalization gets progressively tougher with each round, this suggests that some degree of caution is warranted in building up expectations concerning what may be feasible.

Finally, there is no consensus across the studies concerning the distribution of gains amongst the contracting parties. A comparison of the distribution of gains is made difficult by the differences in aggregation of countries in the models surveyed, as well as by the differences in model features, some of which (e.g., including foreign direct investment) can have very significant implications for the net results, as shown by the Dee-Hanslow and other studies that include such effects. At the same time, these results do highlight the risk that some parties might lose under some scenarios. Accordingly, one reasonably broadly shared conclusion amongst researchers in this area is that it will be important for liberalization to proceed on a broad front to minimize risks of some parties walking away as losers.

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[28] See, Rajesh Chadha, Drusilla K. Brown, Alan V. Deardorff and Robert M. Stern, "Computational Analysis of the Impact on India of the Uruguay Round and the Forthcoming WTO Trade Negotiations," op. cit.. Note: the Chadha et al. findings with regard to the extent of trade expansion appear to be in the same general ballpark as a recent estimate of the GDP gains from the Uruguay Round made by the U.S. Council of Economic Advisors. The Uruguay Round gain was estimated at 0.4 to 0.6 percent of GDP, well below the 0.9 to 1.7 percent of GDP several years earlier. See Council of Economic Advisors, 1999, "America's Interest in the World Trade Organization: An Economic Assessment," Washington, D.C.: The President's Council of Economic Advisors.

Clearly, the numbers presented in these studies do not settle the issue of the extent of the remaining gains from trade. Can it nonetheless be concluded, based on the above analysis, that the commercial gains support the commitment of resources to negotiate and implement a new multilateral round of trade negotiations?

There are several considerations that argue in the positive.

First, even if the gains from a new round measurable in general equilibrium models fall at the lower end of the spectrum (i.e. about 0.3 percent of global GDP by the middle of the next decade based on a one-third cut to protection), which is to say even if the gains are no greater than the estimates for the Uruguay Round suggest, the central presumption is nonetheless some net gain at the margin.

Second, a round is needed to broaden the basis of negotiations to realistically permit any forward movement in the agriculture and services negotiations, which individually probably cannot offer sufficient trade-off possibilities to yield significant results on their own. By the same token, a broader round is needed to improve the prospects that all will share in the benefits.

Third, treated in a cost-benefit framework, the net benefits from a round must be evaluated on the basis of a higher income stream less the investments required to generate it. Taking into account the fact that social rates of return that would be used to discount future incomes are usually taken to be low, income gains made over the next two decades would not be heavily discounted. The World Bank study noted earlier undertakes such a present-value calculation based on the scenario in which income is US$355 billion higher in 2015. As noted, this calculation yields a present value of US$1.5 trillion to developing countries alone, and global gains of US$2.8 trillion from additional trade over the period to 2015 based on the hypothesis that an agreement is reached in 2005. These results are not at all out of line with the average results reported above.

The net resource costs to achieve this gain are not particularly large. This reflects the fact that the machinery of trade policy administration is already in place. The use of this machinery for negotiations represents, in good measure, increased utilization of existing capacity. For developing countries, where the highest opportunity costs could be argued to exist, negotiating costs are subsidized both by official trade-related assistance and potentially by the informal advocacy of the network of civil society organizations that constitute what has been called a "virtual secretariat" for the developing countries.[29] Finally, as regards implementation costs, similar arguments prevail. Moreover, in the latter case, institutional reforms implemented to support trade often are needed for domestic economic development in any case.[30]

The case of *relative* legitimacy[31] of further liberalization can therefore be upheld, particularly if least-developed WTO members avail themselves of the many opportunities to "free ride" on the intellectual capital developed on their behalf by more advanced developing countries that have more ample resources, as well as by the international network of policy CSOs.

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[29] The term is taken from Sylvia Ostry, "The Uruguay Round North-South Grand Bargain: Implications for Future Negotiations," paper presented at the conference, entitled: *The Political Economy of International Trade Law*, which was held at the University of Minnesota Law School, from September 15 to 17, 2000. For a discussion of the positive role that civil society can play in trade policy formulation, see, John M. Curtis, "Trade and Civil Society: Toward Greater Transparency in the Policy Process" in Trade Policy Research 2001, (Ottawa: Department of Foreign Affairs and International Trade, 2001), pp. 295-321. Whether or not developing countries will make use of this potential is another question. CSOs reportedly had little impact on developing country positions at Doha. Source: personal communication from Guy de Jonquières of the *Financial Times*.

[30] It is also quite possible that liberalization, by reducing the height of effective barriers to trade, also reduces the incentives to try and avoid them and, by the same token, reduces resource requirements for enforcing policies.

[31] The importance of taking this into account was stressed by Pierre Jacquet of the Institut Français des Relations Internationales at the conference *Efficiency, Equity and Legitimacy: The Multilateral Trading System at the Millennium*, Harvard University (June 1-2, 2000).

The above discussions indicate that there is no clear-cut answer as to what the commercial benefits would be, or even necessarily from which quarter they might arise. At the same time, the weight of the evidence suggests that some gains in income can be realized under reasonable assumptions about the extent of liberalization. The gains are likely to be incremental, not transformational in scale but, especially seen in a longer-run cost-benefit context, worth the pursuit. Most importantly, many considerations point to the importance of the Doha Round eventually living up to the billing that some have suggested, namely that it be a "development round." Indeed, the evidence suggests that, if it is *not* a development round, its contribution will be marginal at best.

Maintaining the balance between regional and multilateral liberalization

The modern trade system is, in essence, a patchwork of multilateral, regional and bilateral arrangements, broadly, although not fully, consistent with each other. Some regional arrangements, such as the European Union, NAFTA, or the Australia-New Zealand Closer Economic Relations (CER), are deeper and more complete than others, such as Mercosur, the Andean Pact or ASEAN. Also to be taken into account is the proliferation of bilateral initiatives, which number in the hundreds (including signed agreements and negotiations toward an agreement). Canada alone, for example, has recently concluded a free trade agreement with Costa Rica and is actively exploring similar arrangements with the Central American "four" (Guatemala, Honduras, El Salvador and Nicaragua), as well as with Singapore.

The literature on regional trade agreements focuses mainly on the issue of the relative degree of trade diversion versus trade creation.[32] Regional preferential arrangements that create enough trade to more than compensate those countries that face some measure of trade diversion are generally considered to be beneficial. Arrangements that result mainly in trade diversion would be considered undesirable. The current consensus on existing regional trade arrangements is that, on balance, they are positive, creating more trade than diverting it and providing "building blocks" for larger, potentially worldwide or multilateral arrangements, or serving as "stepping stones" to faster liberalization, rather than constituting "stumbling blocks" to the promotion of freer global trade.

They do, however, pose certain risks. Standards and norms can vary from agreement to agreement, including different rules of origin, which complicate matters for business. As well, difficult issues—be they services, agriculture or government procurement—are often not dealt with in regional negotiations. Rather, they are left to the multilateral sphere to be resolved. Accordingly, parallel progress in the multilateral sphere is an important complement to the effective functioning of the regional agreements.

Moreover, with regional preferential trade arrangements, it might be said that "what goes around, comes around": specifically, the success of some countries in creating preferential access to important markets can over the long term erode the growth prospects for those disadvantaged by such deals—this might be true, even if the regional or bilateral trade agreement were, on balance, trade-creating for all. Canada was successful in negotiating an FTA with the United States but then had to prevent being "hubbed and spoked" when Mexico sought a similar arrangement with the United States—hence the

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[32] The identification of this issue goes back to the work of Jacob Viner. A recent survey of this issue is also provided in T. Cottier, "The Challenge of Regionalization and Preferential Relations in World Trade Law and Policy," *European Foreign Affairs Review*, V. 2, 1996, pp. 149-167. See also, F. Roessler, "The Relationship between Regional Integration Agreements and the Multilateral Trade Order," in K. Anderson and R. Blackhurst, (eds.), *Regional Integration and the Global Trading System*, Harvester Wheatsheaf, 1993.

NAFTA. The EU has many trade arrangements now in place; the Mexico-EU FTA is but the latest significant extension of this system of preferences that does not include Canada, which has left Canada effectively, together with a handful of other countries, in a position of "least favoured nation" in European trade. Over the longer term, this appears to be a factor in the gradual decline in importance of the EU in Canada's trade. Mexico is also pursuing other arrangements in the Americas, which emphasizes the importance of advancing the FTAA negotiations to maintain Canada's market position in the western hemisphere.

Furthermore, there are additional complexities in evaluating preferential trading arrangements—do they, for example, impact on the way that the forces of comparative advantage shape the economies that enter into these deals and, if so, is this actually of benefit to the parties? The World Bank, which is an enthusiastic supporter of trade liberalization as the linchpin of development strategies for poor countries, has recently provided an extensive cautionary note about the risks that regional arrangements could pose and offers the following advice: "Smaller countries with less technical capacity to evaluate these schemes may find themselves at a net disadvantage, and be better off with first-best unilateral trade reform."[33] In other words, while liberalization is good, preferences are potentially damaging. One might also contrast the virtual absence of regional preferential arrangements in East Asia, which has had the greatest developmental success, and the proliferation of such arrangements in Latin America and Africa.

Arguably, regional liberalization works best if the narrower but deeper liberalization that is possible regionally is complemented by multilateral liberalization that reduces the margin of preference that regional liberalization creates. This nonetheless leaves the margin of preference for domestic production reduced, which is the main source of structural economic benefit. In this context, maintaining the pace of multilateral liberalization is important for the longer-term efficiency of the global structure of production.

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[33] See World Bank, *Global Economic Prospects and the Developing Countries 2002: Making Trade Work for the World's Poor*, op. cit., p.154

Further, and specifically in Canada's case, it is sometimes hard or impossible to deal with our most important trading partner by far, the United States, on strictly bilateral terms; we need allies from around the world to make it worthwhile for the United States to offer concessions to us on some key issues such as government procurement or certain aspects of agriculture, even in areas of direct Canada-United States interest.

At the present time, given that the deepening of integration within Europe (primarily due to its common currency) has expanded the effective margin of preference for its domestic participants, a round is needed to keep Europe firmly anchored in the multilateral regime. The phenomenal rise of trade within North America and the consequent relative weakening of trade ties across the Atlantic and Pacific also raise longer-term geo-economic and geopolitical risks that a multilateral round would at least partially counter.

The Doha Declaration includes, at paragraph 29, a commitment to clarifying and improving disciplines and procedures under the WTO provisions that apply to regional trade agreements. The most important discipline, however, would be further substantial multilateral liberalization that effectively reduces the margins of preference that regional agreements can provide.

Other Issues

Trade negotiations are not open-ended affairs: they are circumscribed more or less tightly by the negotiated terms of reference for the round. The main gains from trade will derive from the extent to which the commitments in the three main areas, industrial products, agriculture and services, are translated into market opening and/or reduction of market distortions. There are, in addition, a large number of trade-related issues to be dealt with in the Doha Round, either in terms of negotiations or as work programs, or both. The contribution to economic growth from addressing these issues is less direct, although, in the longer run, they are important to the efficiency of the global economy. These issues include:

- trade-related aspects of intellectual property rights (TRIPs);
- the relationship between trade and investment;
- the interaction between trade and competition policy;
- transparency in government procurement;
- trade facilitation;
- rules on subsidies and countervailing measures;
- disciplines and procedures applying to regional trade agreements;
- certain aspects of dispute settlement;
- trade and the environment (including *inter alia:* negotiations on the applicability of WTO rules as among parties to multilateral environment agreements; and study within the Committee on Trade and Environment of the effect of environmental measures on market access and labeling requirements for environmental purposes);
- electronic commerce;
- issues related to the integration of small, vulnerable economies into the multilateral trading system;
- the relationship between trade, debt and finance;
- trade and transfer of technology to developing countries;
- technical cooperation and capacity building (including through the Integrated Framework);
- least-developed country concerns.

Unlike mutual tariff reductions, many of these issues do not afford "win-win" solutions. Hence, the frictions in these areas can only be addressed multilaterally in the context of a broad package that permits tradeoffs. Periodically, a round is needed to allow these issues to be addressed.

Conclusions

Promoting trade liberalization has not been easy for some time now. In good measure, this reflects how far the global trading system has moved toward the theoretical norm of free trade. Liberalization in the comparatively non-problematic industrial sectors has resulted in the realization of much of the dynamic gains from openness and, through spillover effects, some of the gains in non-liberalized sectors such as agriculture and services. Moving an already highly open global economy to a somewhat more open posture by liberalizing in the more problematic areas results in a more complex accounting of benefits, adjustment costs and risks than was faced in the early rounds of the post-WWII period.

Putting aside the sometimes exaggerated claims and counterclaims of benefits/damages from trade and investment that have emerged from the escalation of rhetoric about globalization, a qualified case can be made that the Doha Round has the potential to yield a positive balance of benefits.

To a large extent, this result depends on the Doha Round being a "development round" as advertised and hoped for. That is to say, the main benefits from trade at this juncture lie in stimulating trade with presently marginalized economies. These are the countries which:

- tend to have medium-level tariffs whose reductions are most likely to stimulate trade,
- accordingly also need market access abroad to pay for increased imports but which themselves tend to face medium-level tariffs or binding tariff-rate quotas; and
- stand to reap, probably by far, the largest dynamic benefits from becoming more open.

If the exchange of benefits is largely limited to within the OECD, the gains will be hard to detect. This largely reflects the fact that, within this group of countries, tariffs facing other members of the group are either small or prohibitive. Accordingly, even impressive cuts in percentage terms will have little in the way of practical implications for trade flows. In services and agriculture, where the greatest untapped gains are suspected to lie, the quantitative studies have yet to present a truly compelling case, confidence in the supporting analysis is weaker, the surrounding issues are more complex, and the likelihood of rapid movement is consequently less.

In systemic terms, the multilateral round can usefully counterbalance the distortionary aspects of regionalism, as well as deal with some of the frictions and irritants that accumulate between rounds. These gains are hard to quantify but stand there as offsets to the largely unrecognized adjustment costs of liberalization.

It is important not to oversell the potential gains from the new round. Playing with numbers, the very same estimate of the gains from the round can be presented as impressively large or sufficiently small to make one wonder what all the fuss is about.[34] The important point in public policy terms is that it likely is an incremental gain and more than likely to pay for the resource costs involved in negotiation and implementation.

The messaging on trade liberalization must evolve

The issues today are subtler than they were in the past. It can be argued, therefore, that the messaging on trade needs updating —on both sides of the globalization debate.

The conventional framing of globalization issues focuses on the disruptive aspects of economic growth through competition (structural change and labour market transition); the undermining of regulatory safeguards (including environmental) due to the pressure from fast-paced economic change and external regulatory competition; the widening of income gaps between the rich and the poor, within societies as well as between countries; and the potential in a trade-integrated world for domestic economies to be destabilized by events beyond their borders.[35] With the trade policy community and anti-globalization activists locked into adversarial positions over this construction of the issues, it would make sense from this perspective alone to update how we frame the issues so as to possibly facilitate the emergence of a new consensus.

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[34] For example, as shown by the World Bank, summing 10 years' worth of increments to global income from a new round and discounting back to the present using a low social rate of discount yields a global income gain of US$2.8 trillion from a liberalization scenario in which annual income in 2015 is only US$355 billion higher than it otherwise would have been. The very same impact estimate, presented as the increase in income in 2015 for an average income earner, would represent enough to take a family of four out to dinner and a movie. For a person in a developing country living on a dollar a day, the implied gain would be a few dollars.

[35] As an example of one such articulation, see the European Commission's recent "argumentaire" for the Doha WTO ministerial

More fundamentally, the procedures of trade liberalization probably should be reconsidered. The point is not that we need a change of heart about trade, but we may need a change of art and quite possibly a change of pace of liberalization.

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meeting: *A new round for harnessed, equitable globalization* (Brussels: European Commission, October 2001).

Part II:

Trade in Services: A Survey of the Issues

Benefits and Costs of Trade and Investment Liberalization in Services: Implications from Trade Theory

Brian R. Copeland*

Introduction

In Canada, the service sector of the economy accounts for about 73 percent of total employment, but only about 14 percent of international trade.[1] That is, although most workers produce services, most international trade is in goods. This disparity suggests that there may be potential for further gains from trade in services. During the Uruguay Round of trade negotiations that led to the World Trade Organization (WTO), member countries set up a structure for multilateral trade negotiations in services, the General Agreement for Trade in Services (GATS). Since negotiations to open international service markets further will be proceeding under this umbrella, it is important that we develop an understanding of the ways in which service trade liberalization may benefit the economy, as well as some of the possible pitfalls.

The purpose of this chapter is to consider the implications of international trade and investment theory for the benefits and costs of trade liberalization in the service sector. Although there will be some attention given to empirical evidence and to policy implications, the main focus of this paper is conceptual. There are numerous policy and legal studies and several empirical reviews available;[2] however, there has been relatively less attention given to an assessment of the implications of the recent international trade-theory literature and the ways in which it needs to be further developed to deal with some of the particular issues in service trade that differ from goods trade.[3]

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[1] See Roy (1998); the figures are from Statistics Canada.

The structure of the paper is as follows. First, I review some general issues regarding the differences between goods and services trade, touching on issues raised by the intangibility of services, the importance of physical presence of client and service provider, the possibility of embodied versus disembodied factor service trade, the significance of public provision of some services, the complexities raised by regulation of domestic services, and the heterogeneity of services.

Then I review the theoretical literature on trade and investment in services, touching along the way on salient aspects of the theories of comparative advantage and factor-price equalization (including substitutability or complementarity between trade in goods or service, and trade in factor inputs), income distributional issues, and the insights generated by allowing for various refinements of the basic models of trade such as product differentiation, scale economies, imperfect competition, foreign direct investment, agglomeration effects, dynamic gains from trade and investment, and market power effects. As well, I identify some important gaps in the literature.

In the fourth section of the paper, I discuss the implications of trade theory for the benefits and costs of trade and investment liberalization in services, drawing on a simple theoretical framework, which is included in the appendix. Some of the issues addressed here are: terms of trade effects, the welfare implications of piecemeal liberalization (including differences from liberalizing the different modes of supply), spillover effects of piecemeal liberalization given product variety (including such issues as the possible collapse of specialized local services, "brain drain" concerns, and various regulatory issues), asymmetric information issues, concerns about quality of services, the effects of services liberalization on the structure of firms, issues specific to network industries, and more general political economy issues. The models in the appendix both provide an introduction to the different approaches in the theoretical literature and are suggestive of how some of the gaps in the theoretical literature can be addressed. I also indicate possible directions for future work.

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[2] See the discussion of empirical studies in Section 5 for citations.

[3] See Sapir and Winter (1994) for a survey of some of the earlier work on theoretical aspects of service trade.

The final three sections provide a brief review of some of the empirical literature and suggest some policy implications. I then draw a few conclusions.

Conceptual issues

Goods versus services trade

An analysis of the potential benefits and costs of trade or investment liberalization in services requires a conceptual or theoretical framework. That is, we need a model of the economy to highlight the fundamental forces that drive trade and foreign investment, and trace through their effects on various sectors of the economy and ultimately on the real incomes and economic well-being of individuals.

There exists a well-developed body of theoretical and empirical techniques for the study of international trade and investment, but it is fair to say that most presentations of trade theory tend to focus on trade in goods. Much of the analysis of trade liberalization in textbooks focuses on the effects of removing taxes and other impediments that affect the physical movement of goods or capital across borders. However, with some shift in emphasis, standard trade theory provides a framework for analyzing services as well as goods.

To determine whether standard trade theory is useful for analyzing international service trade, we first need to be clear on what a service is, and how it differs from a good. There are many definitions in the literature[4], but the one that I find most useful is from Nicolaides (1989). He defines a service as a process; that is, a service is a transaction involving an agreement to perform certain tasks.

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[4] See Hill (1977), Sampson and Snape (1985), and Sapir and Winter (1994).

With this definition in hand, let us consider whether standard trade theory is equipped to deal with service trade. In standard trade theory, consumers have preferences over bundles of goods and services; and consumption is constrained by prices and income. Consumers can spend their income on either goods or services, or some combination of both. Firms produce products from inputs, and they sell these products either to consumers or to other firms as intermediate goods. Again, there is no presumption that inputs or outputs must be "goods." In fact, in standard trade models, inputs are typically thought of as services from labour, land or capital. Transportation services or insurance can be thought of as intermediate inputs. Plus, although in trade theory we often think of firms' outputs as "goods," there is nothing that requires this. In other words, standard trade theory is simply an application of standard microeconomic theory, and so, at an abstract level, it applies to both goods and services.

In practice, however, applying international trade theory to services requires a shift in emphasis. Some issues in goods trade, such as border taxes, are not relevant in service trade. Also, many issues, such as labour mobility or investment, although they do arise in goods trade, are central to the analysis of service trade. Below, I highlight several ways in which goods trade and service trade may differ.

Intangibility of the product

Since a service is a process, a transaction involving a service need not involve a physical product changing hands. In an international context, this means that a tangible good need not always cross borders for a transaction to occur. On the one hand, this creates opportunities for trade (via telephone, videoconferencing or the Internet) that are free from interference by customs' authorities. However, on the other hand, it also means that the types of barriers that inhibit trade may be different and more complex than those for goods.

For many types of services, the service provider must come into direct contact with either the client or a site owned or operated by the client. As has become standard in the literature, this leads to a classification of four different means of international service transactions:

- The client may come to the service provider.
- The service provider may come to the client.
- The service provider can set up a branch office or service facility in the client's home jurisdiction and service clients from that facility either by hiring local personnel or by using foreign personnel.
- If physical interaction is not required, then the transaction can occur via standard cross-border trade, where interaction occurs via mail, telephone, video-conferencing, Internet, etc.

Haircuts and surgery are examples of cases where the client and service provider must meet. In either of these cases, either the client can come to the service provider, or the service provider can travel to meet the client. Plumbing is an example of a case where the plumber must typically come to a site owned or managed by the client. In each of these cases, the service provider may also be able to service the client via a branch office in the clients' local jurisdiction. International vacations, on the other hand, provide an example of a service where the client must travel to the service provider. Finally, for some types of services, some combination of any or all of these methods of delivery may be involved. For example, a tour guide working in Canada for a British multinational travel company could use the Internet to arrange air transportation from a U.S. airport for a group of clients and then physically escort the group to a vacation destination in Africa, where the tour guide is assisted by local service providers.

The need for physical interaction between the client and service provider is a major way in which some (but not all) service trade differs from goods trade. Goods can be shipped to clients, but services in many cases cannot be. This means that restrictions on labour mobility and investment can provide major impediments to international service transactions.

Because a service is a process, or an agreement to perform certain tasks, it may not be possible to separate a service from the factor inputs (such as labour and capital) that are used to produce it. For example, if I were a plumber and was hired to fix a sink in the United States, then I would have to travel across the border and sell my labour services to my U.S. client. That is, to export plumbing services, I need legal authorization to cross the border and work in the United States. The only way I can export is to sell my labour services directly to a foreign client in the foreign country

If instead I were a woodworker then, similarly, I could travel across the border and sell my woodworking services to a company in the United States that makes wooden tables. However, alternatively, I could use my woodworking skills to build tables in Canada and sell them to customers in the United States. That is (in the absence of legal impediments), I could either sell my labour services directly to a foreign client to produce a good in the foreign country, or I could sell my labour services indirectly by selling the table. We can think of the table as containing "embodied labour services."

One way to think about goods trade liberalization is that it is a way for factors to sell their services to other countries indirectly as factor services embodied in goods. Gains from trade in factor services accrue to both the buyer and seller, but the factor itself need not physically cross borders. This type of trade liberalization has a great deal of appeal to those who are unwilling to allow unrestricted mobility of labour and capital across borders. Countries are able to maintain full control over immigration and foreign investment, but, at the same time, reap at least some of the benefits of trade in factor services by committing to a regime with free trade in goods.

Because many types of services cannot be embodied in a "good," many proposals to liberalize service trade are, in fact, proposals for increased labour mobility or investment across borders. This is a significant departure from the focus of goods trade liberalization and raises a number of issues such as why labour mobility is restricted in the first place, and whether rules for labour mobility and investment should be different in service industries than in other industries.

Public provision of services

One of the major functions of governments in modern economies is to provide certain services such as education, health care, security, nature parks, and so on. This means that many services are produced or managed by the public sector. Moreover, there has often been a conscious decision to provide these services outside the market. The range of services provided by the public sector varies across countries. It also varies across time within countries in response to the changing priorities of the electorate.

The overlap between market and non-market provision of services raises a number of issues that are less important in the case of goods trade because of a much smaller government presence in the goods sector in market-oriented economies. Should governments be constrained by rules on procurement of services? Should the electorate retain the power to elect a government with a mandate to move a service into the public sector (as, for example, happened in British Columbia with automobile insurance) and, if so, under what terms? Is public provision of a service an unfair subsidy? How do we account for the costs and benefits of an agreement that may constrain governments' flexibility in the public provision of services?

Regulation

Domestic regulations are a more important hindrance to international trade in the service sector than in the goods sector, in large part because services are a process rather than a product.

Goods production is subject to extensive regulations that vary across countries. Health and safety regulations, environmental restrictions, zoning laws, and so on, all affect goods production. However, the problems arising from different types of regulation across countries can be circumvented in an international trade regime, if countries agree that, when goods cross borders, they retain the right to regulate characteristics of *products*, but not the *process* by which the good is created. That is, for example, countries can impose automobile-emissions standards, but cannot impose rules that require that imported automobiles be produced by workers that are subject to the same labour laws as home workers. This distinction between product and process regulation is not always as clean as I have implied above, but it goes a long way toward smoothing goods trade flows.

A similar option is not available for most services, if we think of a service as a process rather than as a product. Also, since domestic regulations applied to services are process regulations, the application of these regulations to imported services are regulations affecting the process by which the foreign service provider produces services. Since process regulations differ across countries, regulatory conflicts are inevitable.

Heterogeneity of services

Just as there are many different types of goods, so too are there different types of services. Heterogeneity in the fundamental characteristics of either goods or services means that highly stylized models may overlook some important characteristics of some sectors. In such cases, more specialized models are needed. As examples, some services are provided via networks (such as telecommunications and financial services); many are subject to problems of asymmetric information (such as in insurance); and others can affect firms' decisions about whether to produce inputs internally or contract with outside firms. These and other issues call for specialized models.

Because the scope of this paper is limited to a broad overview of the costs and benefits of service trade and investment liberalization, these specialized characteristics of certain types of services will not be addressed here in much detail. However, there is much scope here for future work.

Standard trade theory is well equipped to handle both goods and services. This means that an analysis of the benefits and costs of services trade and investment liberalization does not require a paradigm shift, but it does require a shift in emphasis and a focus on new types of questions. Perhaps the two main reasons why formal trade agreements in the services sector have lagged behind those for goods trade are the importance of both labour mobility and foreign investment as part of service delivery, and the role of domestic regulation as a trade impediment. Both of these issues have been studied in the standard trade literature, but much more work in these areas is needed as the focus of trade liberalization shifts toward services.

Review of the theoretical literature

There are four principle approaches to modelling the effects of services trade liberalization in the theoretical literature.

Some models apply the standard competitive model, where trade is based on comparative advantage. In these models, trade arises because of differences between countries.

Monopolistic competition models explain trade between similar countries on the basis of firm-level scale economies, consumer demand for product variety, and/or firms' demand for specialized intermediate inputs. In contrast to comparative advantage-based theories, these models are not based on inherent differences between countries. Rather, trade arises because firms carve out their market niche and produce distinctive products that are appealing to customers in many different countries. These models predict large volumes of trade between similar countries.

There are also economic geography models, where there are agglomeration incentives. In these models, trading costs can lead to concentrations of economic activity in certain centres. Freer trade lowers some types of trading costs. This sometimes leads to greater concentration of economic activity in the "core," but it can also lead to more dispersion of activity.

Finally, there are models that focus on special issues such as transportation services.

Most of these approaches can be used to investigate the four different modes of service delivery; however, in practice, they tend to focus on either direct trade or foreign investment. In some cases, multinational firms are explicitly modelled in a general equilibrium framework, and, in other cases, investment is modelled as a movement of factors of production across borders. As well, some papers model services as a final consumer "good," while others treat services as an intermediate input, and some do both.

The set of theoretical papers that explicitly set out to model services trade is actually rather small; many of the papers end up looking more as less like an application of standard trade or factor-movement models with one or more of the sectors or inputs defined as a "service." This is not surprising for reasons discussed above. This does suggest, however, that the most fruitful approach for understanding trade in services is likely to make use of the standard trade-theory literature, adapting the models to the special circumstances of the services under consideration, where necessary. The recent work in trade theory investigating endogenous multinational firms and the work on models with transport and communication costs is likely to be fruitful in this regard. I discuss some of this work below.

Comparative advantage models

In a large class of models, trade is driven by differences between countries. Technology, relative factor supplies, and government policy are the main types of differences emphasized in this approach. These differences lead to disparities in relative goods prices and/or factor prices across countries in the absence of trade. That is, relative costs of both inputs and outputs tend to differ across countries, and this creates incentives for mutually beneficial trade. Deardorff (1985), Burgess (1990), Melvin (1989), and Jones and Ruane (1990) all apply this approach to the service sector. As well, services can be treated as being produced either for final consumption or as intermediate inputs. Burgess focuses on services as intermediate inputs, Melvin and Jones/Ruane focus mainly on final consumption, while Deardorff investigates both. In all cases, it is useful to think of there being pre-existing trade in goods.

Models in which trade is stimulated by differences between countries predict gains from trade from two sources: gains to exporters and gains to consumers of imports. These gains are always potentially available, when prices differ across countries.

Exporters gain from access to a large external market. If, for example, Canada has an abundance of well-trained mining engineers, liberalized service trade would allow Canadian engineering firms to work on projects in foreign countries. This would increase demand for the services of Canadian engineers, and thereby raise their real income. That is, freer trade creates job opportunities and raises income in those sectors of the economy in which a country has a comparative advantage.

Conversely, in other sectors of the economy, consumers benefit from access to lower-priced foreign services. That is, imports expand in those sectors in which Canada has a comparative disadvantage. This places increased competitive pressure on firms in import-competing sectors. However, this is the other source of standard gain from trade: freer trade benefits consumers by increasing competition and providing more choices at lower prices.

Standard comparative advantage models tend to predict that freer trade will increase national income at the aggregate level. That is, the country "as a whole" is predicted to benefit from freer trade. However, these models do not predict that everybody gains from trade. Those who work in import-competing sectors will find themselves subject to increased competitive pressure. Both workers and firms in these sectors can lose during the adjustment to freer trade.

The possibility that some people may lose from trade liberalization means that it may not receive unanimous support. However, it should be noted that a well-functioning economy is continuously subject to many types of changes that require adjustments by firms and workers. For example, changes in technology can also cause workers to lose jobs and firms to go out of business because of increased competitive pressures. The introduction of new technologies is therefore sometimes subject to resistance as well. However, new technologies also create new opportunities. While governments in modern market economies may restrict new technologies for health and safety reasons, they typically do not block new technology because of concerns that some people may lose their jobs. Freer trade is similar in this respect to the introduction of new technology—it creates new opportunities, it can lower prices and raise aggregate income, but it can also lead to losses in some sectors, raising the usual structural adjustment issues (social safety net, etc.).

Factor-price equalization:
Trade in goods and factors as substitutes

If technology is similar across countries, then, in some cases, free trade leads to a convergence of factor prices across countries. This is because, as we noted above, we can think of trade in goods as embodied trade in factors. Labour in one country competes with labour in another country indirectly via competition in the markets for goods that labour produces. This increased indirect competition between workers in different countries tends to reduce the wage differentials that caused the trade in the first place.

This can have important implications for the effects of liberalizing service trade in a world where we already have relatively free trade in goods. Free trade in goods alone may already have led to substantial convergence of factor prices, and may thereby already have reduced some of the potential differences across countries.

Suppose that, initially, services are not traded, but that services use the same types of inputs as goods, and that technology is the same across countries. If free trade in goods equalizes factor prices across countries, then, even though services are not traded between countries at all, the prices of services may be equalized across countries via the general equilibrium consequences of goods trade. This can happen in the Burgess model but also in many other models, where there are at least as many traded goods as factors. The basic idea is that trade in goods is really an indirect way of trading factor services, and, in some cases, trade in goods alone is sufficient to allow all of the potential gains from factor service trade to be realized.

Therefore, one important implication of models where trade is driven by differences is that trade in goods alone, without any service trade, can reduce the economically relevant differences across countries, and therefore can reduce the potential benefits of service trade. In the extreme case of full factor price equalization, trade in goods alone can completely eliminate the potential additional gains from service trade liberalization. As an example, suppose that trade in goods equalizes wages across countries. Then, even though janitorial services are not traded internationally, wages of janitors will be equalized via competition in the internal labour market of each country, and thus the price of janitorial services will also be equalized. Liberalizing trade in janitorial services in this model would yield no benefits, if there is pre-existing trade in goods. Notice that this does not imply that services trade liberalization will cause any harm; it is just that it need not yield any benefits.

Factor prices not fully equalized by trade in goods

Of course, trade in goods alone will not always equalize factor prices and non-traded services prices. For example, if there are inputs used in the services sector that are not used in the goods sector, then trade in goods alone does not provide a channel for indirect trade in these factor services. As well, differences in technology, domestic policy, and other attributes of the production structure of economies, can prevent full factor price equalization. In these cases, liberalizing trade in services will generate standard gains from trade to both exporters and consumers as discussed above.

Services trade and factor trade as substitutes

One of the major issues in services trade is whether it makes a difference if one liberalizes direct trade in services, or whether trade via the other three modes of supply is also liberalized. Two of the other modes involve movements of inputs (labour or capital) between countries.

Mundell (1957) pointed out that, in some cases, trade in inputs and outputs are perfect substitutes for each other, and so it does not really matter which liberalization route is chosen from a welfare perspective. In these cases, the gains from trade due to differences in services prices across countries can be realized by either trading the services directly, or by allowing the factors that produce the services to move. This is important for services, because, in many cases, direct trade in services is not feasible, because buyers and sellers have to meet. In these cases, allowing factor movements such as direct foreign investment, can allow countries to reap the potential gains from trade.

Goods trade and factor or service trade as complements

Once we allow for differences in technology across countries and richer detail in the production structures within countries then, even in the standard competitive trade model, trade in outputs and trade in factor services may be either substitutes or complements, as demonstrated by Markusen (1983). Markusen and Svensson (1985) show that, with differences in product-augmenting technology, allowing factor mobility will tend to magnify the volume of trade between countries. This result has important implications for trade liberalization, because it implies that allowing free trade in factors can strengthen the gains from goods trade.

Similarly, if we think of services as intermediate inputs, then trade in services and goods can be complementary. Burgess (1990) treats services as intermediate inputs and finds that service trade can stimulate goods trade, when there are technological differences across countries. Moreover, in these models, services trade has the potential to have quite significant impacts on welfare. Suppose a particular service is an essential input. Then, without access to efficient provision of this service, a country may not be able to produce at all. As an extreme example, suppose a country has oil fields, but does not have the expertise to drill and extract the oil. By allowing imports of oil-extraction services, a country can potentially generate huge amounts of wealth for itself. That is, for some types of services, trade liberalization can leverage or catalyze potentially large gains in other sectors. Deardorff (2000) shows how this type of complementarity can be particularly important, when transportation services are needed to facilitate trade in goods. Freer trade in transportation services lowers shipping costs and increases gains from goods trade.

These issues are not confined to the services sector: similar types of complementarities can also occur in the case of goods trade. Allowing imports of some types of intermediate goods may boost productivity and increase trade in other goods sectors. For example, energy imports can lead to a significant increase in overall productivity and boost overall trade in goods. The more general point is that allowing trade in intermediate goods or services can boost production efficiency in both the goods and services sectors of the economy.

Income distribution and complementarities

Complementarities between services trade and domestic production have important implications for income distribution. If we view domestic and foreign factor services as substitutes for each other, then allowing foreign factors of production access to local markets can reduce the demand for local factors, lower their income and generate political opposition to trade liberalization.

If, on the other hand, domestic and foreign factors are complements, then liberalizing restrictions on foreign workers and capital can stimulate domestic employment. This can be particularly important in cases where team production is important. For example, in large engineering projects, access to foreign expertise can increase overall productivity and create demand for local engineers. Access to a foreign movie star may make a local movie production more marketable and increase demand for local actors. This suggests that liberalizing restrictions on factor movements for factors that generate complementarities within the same class of factor can not only increase production efficiency, but can also find political support among factors in the same sector.

Liberalizing trade in services versus allowing factor service mobility

Some papers using the competitive trade model considered the choice between liberalizing trade in services and allowing factors to move across countries, perhaps temporarily. Once we move beyond the very simple trade models with identical technology, these two options are no longer equivalent. [5]

Jones and Ruane (1990) considered this issue in a simple trade model, and their main conclusion was that the income distributional effects differed depending on the type of liberalization. In their model, domestic and foreign factors of production are substitutes, and so the complementarities in the factor market noted above do not arise. As a simple example of their approach, consider a case where a country has superior technology in computers and so has a comparative advantage in computer technology. Then factors specific to the computer industry will earn high returns. Freeing trade in computers will lead to exports, which increases the income of the computer industry-specific factors at home. However, if, instead, factor service trade was liberalized, then, because of the high return to computer-specific human capital at home, the home county would attract computer workers from other countries, pushing down the real return to local computer workers. That is, although both options will increase the country's overall real income, the distribution of income will be very different. The pattern of political support for liberalization will therefore vary with the types of liberalization proposed. Those who support freer direct trade in services will not necessarily support freer movement of personnel.

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[5] It should be noted, though, that a small country will find it optimal to simply allow both free trade and free factor mobility.

Product differentiation, scale economies, imperfect competition

So far, I have focused only on how trade liberalization can affect a country, when the fundamental forces driving trade or investment have their roots in differences between countries. Differences between countries, are, however, only one of the major forces that drive trade and investment. In fact, much of the world's trade occurs between high-income countries, suggesting that similarities across countries do not deter and may even expand trade. There are several explanations for trade between similar countries, all of which are highly relevant for the services sector. Most of these explanations involve scale economies at either the firm or the industry level.

Melvin (1969), Markusen and Melvin (1981), Ethier (1982a), and others demonstrated how incentives to specialize arising from scale economies can generate trade between similar countries. Trade in this approach is not driven by comparative advantage; in fact, there need not be any comparative advantage at all for trade to occur. Instead, trade *creates* differences between countries, as firms in a given industry tend to agglomerate in one country to take advantage of external economies of scale. If trade equalizes factor prices across countries, then all countries benefit from the increased productivity arising from agglomeration. However, if the agglomeration effects are extreme, it is also possible that trade may lead to the contraction of some industries in some countries. This reduces productivity and can lead to losses from trade. This result would occur if there were extreme specialization, such as the world's production of a good or service being concentrated in a few locations. Services industries subject to powerful agglomeration pressures include film production and some financial and investment services that are concentrated in a few major world centres. However, this is not a feature of many (if not most) services whose production tends to be widely dispersed, even within a single country.

An alternative approach is to suppose that specialization occurs at the firm level, and that there is a taste for a variety of services in any given service category. This approach was introduced by Krugman (1979, 1980) and was developed more fully in Helpman and Krugman (1985). Consumers either individually or collectively desire a variety of goods and services within various categories, such as restaurants, forms of entertainment, architectural designs, and so forth. Firms respond by carving out a market niche for themselves to produce specialized products. If there are fixed costs, firms with access to larger markets will have lower average costs, so trade can create productivity benefits even without comparative advantage, as in the papers discussed above. As well, opening up to trade will allow consumers in the home country access to a wider variety of specialized products, since they have access to foreign as well as home varieties.

Ethier (1982b) pointed out that firms also benefit from having access to a wide variety of specialized intermediate inputs and adapted the Krugman model to show how gains from trade can arise from trade in intermediate goods between similar countries.

Building on Ethier's work, Markusen (1989) developed an influential model of trade in producer services. Producer services are services such as banking, consulting, engineering, etc., that firms use as inputs to produce other goods or services. In Markusen's model, firms use services as intermediate inputs, and the cost of production falls, as they gain access to a wider variety of producer services. If no trade in either goods or services is possible, then production of final goods is cheaper in larger markets, because a larger market can support a greater variety of services. Markusen then compares the effects of liberalizing trade in the goods sector versus doing the same in the services sector. If trade in only final goods is possible, then goods production tends to agglomerate in the larger country. The large country clearly gains from this as productivity improves, since a larger final goods sector can support a wider variety of intermediate goods production. However, if full agglomeration does not occur (because of rising labour costs in the large country), then the smaller country can lose from goods trade, because the decline of final goods production leads to a shrinkage of the producer service sector, which, in turn, induces a reduction in productivity. Productivity losses drive down wages and possibly can lead to welfare losses from trade. With trade in final goods, the model behaves much like the external economies of scale model of Markusen and Melvin (1981).

Suppose, instead, that there is free trade in services, but not in final goods. Then, as a result of trade, all countries, even small ones, have access to the full range of producer services. As a result, productivity in final goods production increases in all countries, and so all countries must gain from trade. An important feature of this analysis is that domestic and foreign services are complements; that is, trade allows access to different types of services that were unavailable previously. These services, even if they are cheaper, do not crowd out the demand for local services, but rather are used in combination with them to render final goods production more efficient than prior to trade. One of the major implications of this approach is that smaller markets especially may have a strong interest in liberalizing trade in producer services, since this can partly offset the incentives for firms to locate in larger markets.

Van Marrewijk et al. (1997) extend Markusen's model to allow for both factor abundance differences across countries, as well as differentiation of producer services as a motive for trade. They also allow service providers to sell services either directly or by setting up a branch plant in a foreign market. Earlier models, such as the Heckscher-Ohlin model, the Krugman model or Markusen's model, can be obtained as special cases. This approach is potentially a useful way to study interactions between the different motives for trade; however, conclusions about the benefits and possible costs of trade are much the same as in earlier work.

Francois (1990) takes a somewhat different approach to producer services in a differentiated products model—he assumes that firms are more productive if they can break down the production process into smaller activities. However, producer services are needed to coordinate these activities. If trade reduces the costs of producer services, it allows greater specialization of production. This idea that producer services may help to determine the equilibrium structure of the firm is also discussed by Jones and Kierzkowski (1990) somewhat informally, and also by Deardorff (2000), who points out that trade-induced reductions in costs of transportation, communication, insurance, etc. can encourage a firm to "fragment" its production across different countries to exploit the comparative advantages of different countries in different aspects of the firm's production.

Foreign direct investment

Since foreign direct investment is one of the major ways in which services are provided across borders, an investigation of the implications of liberalizing services trade requires a general equilibrium model with multinational firms. Although this adds considerable complexity to standard trade models, much progress has been made in recent years.

Helpman (1984) and Markusen (1984) produced two of the seminal papers in the general equilibrium modelling of multinational firms. Helpman focused on models of vertical multinationals. In his model, a firm with a head office in a capital-abundant country might locate its production activities in a labour-abundant country to take advantage of differences in labour costs. Markusen's approach focused on horizontal investment. If exporting to a foreign country is costly due to transportation costs or trade barriers, then firms can instead choose to set up a branch plant in that country to produce for the local market there. Although both of these approaches have some implications for services trade, Markusen's market access approach is probably the most relevant for most types of services. As noted earlier, many services are non-tradable directly for technical or regulatory reasons; accordingly, setting up a local presence to obtain local market access is one of the major modes of supply.

Brainard (1993) developed a simple model in which firms trade off the fixed costs of setting up a branch office in the foreign country against incurring the trading costs from exporting. She relied on a great deal of symmetry for her results, but finds that multinationals are more likely to be the chosen model of supply, when trading costs are high and the fixed costs of setting up a branch plant are relatively low.

Markusen and Venables (1998) study the endogenous creation of multinational firms, using a general equilibrium model in which both comparative advantage and market access provide motives for trade. They focus on the market access motive[6] for creation of multinationals, and show how transport costs endogenously determine the mode of supply.[7] They do not consider the role of product differentiation, but consider a model with two homogeneous goods. One sector is competitive, but the other is organized as a duopoly.[8] Trade or foreign investment does not increase product variety in this approach, but rather can reduce prices by increasing market size. As is standard in this approach, barriers to trade make the emergence of multinational firms more likely.

The main results of this model centre on the role of asymmetries across countries in determining the emergence of multinationals. In particular, large differences between countries make multinationals less likely to emerge. This derives from the fact that differences in factor endowments across countries tend to concentrate production according to comparative advantage and thus reduce the benefits of multinational production. Differences in size across countries also reduce the incidence of multinationals because of the fixed cost of setting up branch plants: it is harder to recover fixed costs in small markets. Markusen and Venables also find, however, that relatively smaller countries always gain from the creation of multinationals, whereas large countries may possibly lose. This is because large markets always have an advantage when there are large fixed costs, but the possibility of multinational production tends to reduce the advantage of being in a larger market.

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[6] Markusen et al. (1996) generalize this approach to allow for both vertical and horizontal multinationals. They obtain similar results regarding horizontal multinationals, but there is added richness to the model, since firms have the added option of fragmenting their production across countries to exploit the different comparative advantages. Vertical multinationals are more likely to emerge when countries have very different factor endowments; horizontal multinationals are more likely when countries are similar. High transport costs increase the likelihood of horizontal multinationals. Vertical multinationals, on the other hand, are set up to export back to the home market and thus require relatively low transport costs. Because of the second-best nature of the model, allowing the creation of multinational firms does not always lead to an increase in welfare.

[7] One could also interpret "transport costs" more broadly to encompass other factors, including communication difficulties or regulations that act as barriers to direct trade in services or goods across borders.

[8] In this model, the duopoly (a market with two producers) emerges, despite the absence of restrictions on entry, because the industry faces high fixed costs of production. Each firm in the duopoly is assumed to observe the other passively, and to take its production and pricing decisions as given, then it makes its own decision to maximize its own profits. The resulting equilibrium is known as the *Cournot equilibrium*. Other equilibria are possible in a duopoly, if the firms adopt active strategies; these are described in game theory. Different behaviour by the duopolists could affect the theoretical conclusions reached concerning the implications of trade liberalization.

Markusen, Rutherford and Tarr (2000) extend the Markusen (1989) model of producer services to allow for foreign multinationals. They consider a small country producing both final goods and producer services; skilled labour is employed intensively in both goods and services production. Foreign multinationals also produce local services, using local inputs combined with some imported factor (e.g. foreign workers). Local and foreign services are imperfect substitutes for each other. Local service providers are assumed to be unable to export or to create multinationals—the focus of the paper is on the implications of liberalizing restrictions on service trade for developing countries.

As one would expect from Markusen (1989), he finds that access to imported inputs, which allow foreign multinationals to produce local producer services, increases productivity in the goods sector, generating large aggregate gains for the economy. This result occurs because, even though foreigners are competing with local skilled workers in the services sector, the productivity boost to the goods industry from allowing foreigners to have market access in producer services stimulates the production of goods enough to increase the overall demand for domestic skilled workers. That is, a scale effect offsets a substitution effect. Consequently, domestic and imported foreign services can be *general-equilibrium complements*, even though they are *partial-equilibrium substitutes*. Another interesting result is that allowing access to foreign service providers can alter the pattern of goods trade. That is, the increased efficiency in goods production arising from access to foreign suppliers of producer services can be large enough to induce the country to start exporting some goods that previously were imported.

Models with agglomeration

Economic geography models, which have their roots in the product-differentiation models of Krugman (1980) and Ethier (1982b), are used to study the implications of trading costs and factor mobility for the location of economic activity.[9] Some of these models have important implications for services trade; here I will discuss two examples of this approach to give an indication of its potential.

Krugman and Venables (1995) consider a model where both consumers and firms care about product variety in what I will interpret as a service sector. Firms in one sector (X) of the economy use producer services, and consumers demand these same services as part of their consumption. This paper is noteworthy, because it shows how a "core" and a "periphery" can develop, even if factors cannot move.[10]

To understand this, suppose two countries are initially identical, and trading costs are very high. Then there is very little trade, and both countries have essentially identical outcomes. However, as trading costs fall, firms in sector X face two opposing pressures. On the one hand, there is pressure to be near consumers to avoid trading costs in selling to consumers. On the other hand, there is pressure for X producers to be near their preferred supplier of the differentiated producer services to reduce production costs. At some point, as trading costs fall, the incentives to be near suppliers wins out, and firms in the X sector tend to agglomerate in one country. This becomes self-reinforcing—a larger X sector increases local demand for producer services, which lowers costs even more and attracts even more X producers. Because of transport costs, consumers stuck in the periphery are worse off than in the core and may be worse off than before trade occurred.

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[9] For a good overview, see Fujita, Krugman and Venables (1999).

[10] Core-periphery models were introduced into economics literature to explain the sharp territorial contrasts in the level of economic development and intensity of industrialization in the economic heartlands (the "core") versus surrounding areas (the "periphery").

This model illustrates that, in some cases, limited trade liberalization can hurt a country. However, as trade liberalization proceeds, eventually it becomes cost-effective for firms to purchase services from firms in the periphery because of lower costs. Once trade is fully liberalized, the distinction between core and periphery disappears, and both countries are better off than without trade. This model is highly stylized, but it does raise the possibility that piecemeal trade liberalization can have unanticipated side effects. In this model, allowing various different modes of access (such as foreign investment) could reduce the disadvantage of being in the periphery. This latter point is also the theme of the Markusen, Rutherford and Tarr (2000) paper discussed above.

Markusen and Venables (2000) have made perhaps the most ambitious attempt to fully integrate all the major approaches that have been discussed above. They integrate the Helpman/Krugman model of intra-industry trade based on product differentiation with a theory of endogenous multinational corporations. As well, they discuss the potential for agglomeration, if factors can move. Comparative advantage in this model is determined by the interaction between country size and relative factor abundance. They find that multinationals are likely to emerge when countries are similar and transport costs are high, in order to obtain access to foreign markets. Although it is not the focus of the paper, they point out that, in their model, smaller markets tend to gain from allowing multinationals, but that larger markets may lose. Multinationals increase access to foreign goods and services that would not otherwise be available in a small market.

Markusen and Venables also investigate the implications of allowing factor mobility. When transport and other trading costs are low, and all factors are mobile, there is a tendency for all factors to agglomerate in one country. If only capital is mobile, there is a tendency for partial agglomeration. If capital/labour ratios and market size are similar across countries, movement of capital to one country shifts some producer service production to that country, increasing product variety and lowering prices of producer services there. This increases real income of capital in that country, which encourages still more capital movement. At some point, though, so much capital has flowed in that local competition pushes down its nominal return enough to counterbalance the benefits of greater product variety and lower prices of producer services. A stable equilibrium is then attained. This agglomeration result for capital only holds when transport and other trading costs are low, suggesting that liberalizing services trade without liberalizing market access via multinationals or movement of persons could increase the tendency for agglomeration of factors specific to service industries.

Finally, they show that allowing multinationals reduces the tendency for agglomeration—it increases the demand for capital in smaller countries, pushing up its return and reducing the factor price differential with the large country.

Dynamic gains from trade and investment

Up to this point, I have focused on static models. These models capture the costs and benefits of trade at a given point of time, but do not address the way in which trade can influence the evolution of an economy over time through its effects on incentives to innovate, and to invest in physical and human capital.

The theoretical literature on the interaction between trade, innovation and growth is most extensively investigated by Grossman and Helpman (1991).[11] The key idea in these models is that, when an economy opens up to trade, the opportunities to export to larger global markets creates incentives for firms and individuals to invest in innovative activity. As well, increased pressure from importers can also stimulate firms to become more innovative to stay competitive. In most cases, introducing dynamics into the standard models of trade tends to magnify the standard gains from trade because of the added boost from investment and innovation.[12] These models tend to focus on goods trade, but similar forces would be expected to apply to the service sector as well, since many services such as telecommunications, software and transport are innovation-intensive. While economists have long believed that the dynamic gains from trade are likely much more significant than static gains, this remains an active area of research in the empirical literature. Rodriguez and Rodrik (1999) provide a critical survey of some of the influential work in this area, suggesting that it is very difficult to quantify the effects of trade on growth, while Srinivasan and Bhagwati (1999) look at the same work and argue that the evidence that trade stimulates growth is persuasive. In the Canadian context, Trefler (1999) has evidence that suggests that the NAFTA stimulated process innovation in Canada, but not product innovation. All of these issues are important to consider when assessing the magnitude of the gains from services trade, but they are also difficult to measure.

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[11] Baldwin (1992) and Taylor (1994) are also important references on the dynamic gains from trade.

As well, there are models of investment in human capital in which individuals base their decisions to invest in job training and education on the opportunities in the economy.[13] Freer trade creates increased opportunities to use skills in those sectors in which the country has a comparative advantage; or it creates incentive for firms and individuals to invest in skills that allow them to carve out a market niche to service both local and foreign markets. If Canada has a comparative advantage in knowledge-intensive industries, these models would predict that freer trade would increase the incentives to invest in human capital, so that dynamic gains from trade would be greater than the static gains.

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[12] These models do not rule out the possibility that trade may decrease growth. As Young (1991) points out, if a country has a comparative advantage in sectors that are not innovation-intensive, then freer trade can cause an economy to shift resources out of innovation.

[13] For example, see Findlay and Kierzkowski (1983) and Das (2001).

Finally, in some types of service sector industries (such as air travel within Canada), there are only a very small number of firms that interact with each other strategically. In these cases, one of the major potential benefits of trade liberalization is that it can erode market power and render firms more competitive. This benefits consumers and other producers who use these services as intermediate inputs. Potentially offsetting these benefits, however, is that limited entry by foreign firms into domestic markets like this may shift profits from domestic to foreign firms[14], and possibly shift rents from factors employed in those firms to foreigners. The concerns raised by this caveat are somewhat mitigated, however, if ownership of both domestic and foreign firms is diversely held across countries—Canadians can hold stock in U.S. firms with market power and U.S. citizens can hold stock in Canadian firms with market power. There is a large literature on market power in trade models, but little that specifically addresses special issues relating to services. A full analysis of market power would require some attention to the special features of the particular markets in question. However, there is a strong presumption that trade liberalization in markets that are not very competitive would be welfare-improving.

Summary and gaps in the literature

The theoretical literature that studies the gains from trade liberalization in services is rooted in the standard trade-theory literature. The benefits of trade liberalization come from the usual sources: comparative advantage, product differentiation, economies of scale, increased competition, and increased incentives for innovation and investment.

One of the special aspects of services trade that has been identified is the important role of producer services. Liberalization of trade in producer services can have important effects on an economy's productivity. As well, trade or investment in producer services can be complementary to other types of trade and investment in both the goods and services sectors. Finally, while domestic and foreign producer services may be partial equilibrium substitutes, they can be general equilibrium complements. The latter result indicates that, once the full effects of liberalization of trade and investment in producer services are considered, widespread political support may be available.

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[14] How this occurs is shown in Brander and Spencer (1984).

Another theme of the literature is, however, that services trade liberalization will typically take place in a "second-best" environment in the presence of distortions and market failure. Accordingly, there is no guarantee that trade or investment liberalization is always welfare-improving. This underscores the need for much more analysis of models that address these issues, at both a conceptual and empirical level.[15]

There are still a few important gaps in the literature. First, while there has been considerable progress in integrating the theory of multinational firms into general equilibrium models of trade and investment, this work is still relatively new. More work needs to be done, particularly in the analysis of the effects of different types of trade and investment policies in such models. As well, there has been relatively little study of two of the four modes of service supply: movement of personnel across countries and movement of customers across countries. There is no model that allows for endogenous interaction between all four modes of supply.

Second, many models tend to focus on only one service sector. Given that trade liberalization in services will proceed on a piecemeal basis, with some sectors being liberalized more than others, it is important to consider the potential cross-sectoral spillover effects of such liberalization.

Third, much of the analysis of the effects of relaxing rules on mobility of factors across countries has not done so in a model that captures the reasons why governments limit factor mobility in the first place. Why should skilled workers be allowed to move across borders to provide services and not unskilled workers? If service providers can move across borders to perform services, why not workers in industries producing goods? These questions really have not been fully addressed in the existing models.

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[15] Some of the features that lead to departures from optimal economic outcomes include (a) product differentiation that gives firms some market power, so that price is above marginal cost; (b) market size effects that introduce non-convexities and/or externalities; and (c) agglomeration forces that can lead to multiple equilibria. Models dealing with these issues can be quite complicated.

Finally, a major gap in much of the literature is the role of regulation. Despite some of the caveats noted above, there is a strong presumption that trade and investment liberalization in services would be beneficial, provided that governments are able to maintain the flexibility to efficiently carry out their regulatory and redistributive functions. However, perhaps the most critical issue in services trade liberalization is how to reconcile different national regulatory regimes with a non-discriminatory free-trade regime. Analysis of this requires a model with both endogenous trade and investment in services, but also with a motive for regulation and endogenous choice of regulations by governments. Much more work is required along these lines, and, in my view, this is the major weakness in the current literature.

Gains and losses from liberalization

In this section, I discuss the implications of economic theory for the benefits and costs of services trade liberalization. The theoretical framework is that of the standard competitive trade model. As necessary, I introduce differentiated products, additional services sectors, trading and transport costs, and government regulation of service provision in the context of positive and negative externalities to highlight specific issues. Pre-existing free trade in goods is assumed throughout. The emphasis will be on issues not discussed in the preceding literature review. In the appendix, the welfare effects of allowing an increase in service trade in one sector are decomposed into various effects. These are discussed below.

If markets are perfect, and countries differ, then if goods trade alone does not fully equalize the prices of services and factors across countries, there are unexploited gains from trade that are available due to standard comparative advantage. These gains can be realized by allowing services and/or factors to be traded. Since many services are costly to trade directly, one of the main implications of this line of work is that potential gains from trade in services can be realized by allowing the factor services themselves to be traded (that is, via trade in disembodied factor services). In a model without any distortions, such trade will always increase global efficiency; moreover, for a small country, unilaterally allowing such trade in factor services will always increase welfare.

It is important to note, however, that there is nothing really special about services here. That is, the same issues arise in the goods sector:

- Free trade in goods need not fully equalize factor prices, meaning that there may be potential for further gains from trade if we allow factors to be traded as well.
- Direct goods trade and factor movements have potentially different effects on income distribution, as, for example, discussed in Jones and Ruane (1990).
- Embodied factor service trade as an alternative to direct goods trade is not always possible (e.g. because of transportation costs).
- The right to establish enterprises in foreign countries to produce goods is not always allowed.

However, more importance is attached to the movement of factors in the services trade literature, because, in some cases, there is no possibility of embodied factor service trade at all.

This raises the question of whether agreements that allow movement of factors should be confined to factors that are specific to the services sector, or whether these agreements should simply apply to certain classes of factors, regardless of which sector they are employed in. It is difficult to address this issue without explicitly modelling why countries have been reluctant to open their borders to full factor mobility. Some of the recent political economy literature touches on these issues, (see Persson and Tabellini (1999) for a survey) and some recent work on migration models assimilation costs (Konya, 2000), but there is much potential for more work along these lines.

Terms of trade effects in the goods market

Once we move beyond the small country case, standard competitive models predict that, with pre-existing trade in goods, some countries may lose from an agreement to liberalize service trade or investment, even though it increases global efficiency. This result appears in the capital mobility literature[16], and is pointed out explicitly for the case of services trade by Burgess (1990).

The issue here is that liberalizing trade in services affects factor prices. This spills over into goods markets, and affects both the demand and supply for goods. Since goods are already traded, any change in goods prices is a terms-of-trade deterioration for at least one country. These terms-of-trade effects in goods markets have to be weighed against the direct gains from trade in the services sector. In general, either effect can dominate. A recent study by McKibben et al. (1999) using a computable general equilibrium model found that Japan would lose from an international agreement to allow free trade in carbon-emission permits ("environmental services"), starting from a situation of free trade in goods, because of terms-of-trade losses in the goods market. In the context of services trade, Brown, Deardorff and Stern (1996) find that Canada's terms of trade deteriorate from multilateral liberalization in services, and Dee and Hanslow (2000) find that the terms-of-trade loss for Canada is large enough to more than offset the other benefits of liberalization. These studies will be discussed in more detail later in the paper, when I review some empirical studies. At this point, I simply note that concerns about terms-of-trade effects caused by the opening of new markets are not an idle theoretical curiosity.

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[16] See Markusen and Melvin (1979), Brecher and Choudri (1982), and Grossman (1984) for discussions of the welfare effects of capital mobility given pre-existing goods trade. Copeland and Taylor (2000) find similarly that allowing free international trade in pollution permits need not benefit all countries if there is pre-existing goods trade.

From the perspective of a relatively small country like Canada, this is simply a cautionary note; it is not an argument to avoid service trade liberalization. Even if a multilateral agreement on services did result in a terms-of-trade deterioration in the goods market, this would be caused mainly by the effects on world prices induced by liberalization of services by our trading partners. There is nothing that Canada could do about this. Moreover, opting out of an agreement on services would simply make the situation worse, since the direct gains from services trade liberalization would be forgone, leaving only the terms-of-trade effects. Of course, whether the terms of trade in the goods market improve or decline is a complicated matter. If service trade liberalization stimulated demand for resource-based products, then Canada would gain via the terms-of-trade effect in the goods market, and the direct gains from service trade liberalization would be magnified.

Piecemeal reform

Services trade liberalization is likely to proceed on a sectoral basis. Because trade barriers in the services sector cannot easily be converted to tariff equivalents, there is no simple rule such as uniform tariff reductions that can be applied to liberalize all service sectors simultaneously.

It is well-known that piecemeal trade liberalization in the goods sector need not be welfare-improving.[17] That is, suppose that a small country has perfect markets, except that there are various tariffs in place restricting trade. Then, because the economy is small and markets are perfect, the best policy for this country is free trade (that is, zero tariffs on all goods). However, suppose political constraints prevent some tariffs from being removed in the foreseeable future. Then one might think that it is efficient for the economy to get rid of as many tariffs as possible, since that would move us closer to free trade.

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[17] A good discussion of this result in the trade context appears in Vousden (1990).

However, this is not true in general. This is an implication of the theory of the second best (Lipsey and Lancaster, 1958). That is, arbitrarily picking some tariffs and reducing them, while not reducing other tariffs, has no guarantee of benefiting the economy, and may actually make things worse by exacerbating pre-existing tariff distortions.

In the goods context, there are three ways around this result. One is to use computable general equilibrium models to try to determine whether a given tariff reform is welfare-improving. There should always exist some package of reforms that improve welfare, but an empirical study may be needed to determine what that package's contents should be. Second, one can try to implement gradual, but uniform, tariff reductions, since these can be shown to be welfare-improving in standard trade models. This approach can be used to justify the gradual, but comprehensive, tariff reductions that have characterized multilateral trade liberalization under the GATT/WTO. Third, one can treat the costly spillover effects of piecemeal tariff reductions as simply part of the adjustment costs to long-run free trade. That is, although given tariff reductions may not raise welfare, if they are part of a long-run political process that leads to substantially free trade, then we expect a welfare improvement in the long run, even though the path may be slightly bumpy.

The implications of piecemeal reform in the services sector are somewhat different from the standard analysis of piecemeal tariff reform for a couple of reasons. First, most trade barriers in the services sector are not tariffs, but instead are either restrictions on market access or costs of complying with regulations. Second, although full tariff elimination in the goods sector may seem like an attainable goal, there is not a similar obvious "end target" in services trade liberalization, since many trade barriers arise from qualitative regulations, and thus piecemeal liberalization in the services sector is likely to remain piecemeal for quite some time.

We can model the market access restriction as a quota on foreign access to the domestic market, and the costs of complying with domestic regulations as a real resource cost of importing.[18] Suppose we have initially free trade in goods, and two service sectors with restricted trade. Call these service sectors Lawyers and Accountants. Suppose we increase market access for foreign accountants but not foreign lawyers. Then there will always be the standard direct gains from trade due to reduced consumption and production distortions in the accounting sector. However, this has to be weighed against possible spillover effects on the legal sector.

It turns out that, in contrast to the case of tariff liberalization, there are two cases where piecemeal liberalization in the service sector can (in theory) guarantee a welfare improvement; but there is also another important case where piecemeal liberalization may not be beneficial.

First, suppose that the only restriction on foreign market access in the legal sector is the real resource costs of complying with domestic regulations to gain access to the local market. Then the domestic price will be equal to the foreign price plus the "red tape" costs. So no rents are collected by importers due to trade barriers in this sector, and the domestic price is tied to the foreign price. Consequently, although trade liberalization in the rest of the economy may affect the volume of imports in other protected service sectors, there will be no effect on the domestic price in these sectors, and there are no rents to be dissipated. Piecemeal liberalization in services must increase domestic welfare in this case.

Next, suppose that there are binding restrictions on market access over and above any red-tape costs. This means that the domestic price of services is above the foreign price, so rents are generated by importing. If all of these rents accrue to domestic residents, then using Falvey's (1988) results, we can conclude that piecemeal liberalization must improve domestic welfare. The reason for this is that the binding restriction on the volume of trade prevents liberalization in other sectors from shrinking trade volumes in other protected sectors. As well, although the domestic price of services in protected sectors may change, this is all internalized by domestic agents, if they receive all of the implicit quota rents. Harmful spillover effects of liberalization are therefore avoided.

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[18] See the appendix for details. One could do a similar analysis for export restrictions.

When can we expect this scenario to be relevant? In the case of goods, this scenario arises if import licences are given to local citizens, so that they collect any benefits (rents) from holding such a licence. However, in the case of services, import licences are not a very realistic scenario. The allocation of quota (or market access) rents depends on whether the local consumer buys the foreign-provided service at the domestic price or at the foreign price. This will depend on the mode of provision of the service. If domestic consumers have to go to the foreign market, they pay the foreign price. If they import the service directly from foreign providers and are free to choose among foreign providers, then competition should ensure that they pay the foreign price. If there is some restriction that limits domestic access to foreign service providers via these channels, then that restriction should push up the domestic price above the foreign price, and those local agents who gain access to foreign providers will collect rents. In scenarios such as this, Falvey's results apply, and piecemeal liberalization will improve domestic welfare.

A more likely scenario, however, is that market access restrictions mainly apply to cases where the foreign service provider either comes to the domestic market directly, or sets up a domestic establishment. In either of these cases, we expect the foreign provider to receive the domestic price for services. If market access is restricted, then the domestic price is likely to be above the foreign price, and thus rents are collected by foreign service providers. In this scenario, Falvey's results do not apply, and liberalization in some service sectors can have adverse spillover effects into other protected service sectors and cause a welfare loss.

To see how this can happen, suppose that allowing increased market access for foreign accountants leads to an increased domestic demand for lawyers, and pushes up their wages. Then those foreign lawyers who do have access to the local market will see an increase in the rents they collect from their privileged access to the local market. This increase in rents acts much like a terms-of-trade loss for Canadians (since the price of a service we are importing—legal services—rises). If this effect dominates the direct gains from trade in liberalization in the accounting sector, then we experience a net loss.

To summarize, the likelihood that trade and investment liberalization in the services sector will proceed on a piecemeal basis has some important implications for the overall benefits and costs of liberalization. When reform occurs on a sectoral basis, there can be a tendency to focus on the benefits of reform in that sector alone. However, as discussed above, a general equilibrium approach forces us to consider possible adverse or beneficial spillover effects into other parts of the economy. With tariff barriers to trade, these spillover effects, if adverse, can be large enough to overwhelm the direct benefits of trade liberalization.

Whether the spillover effects of piecemeal reform are a serious cause for concern depends in part on the nature of the trade barriers. If trade barriers in services mainly take the form of "red tape" costs of market access, or if market access is restricted but domestic consumers get to buy at the foreign price, then there are no adverse spillover effects from piecemeal liberalization, and focusing on the direct benefits or costs of liberalization in the affected sector can be sufficient to determine the welfare effects of a reform. However, if protection takes the form of market access restrictions that give a limited number of foreigners the right to charge the higher local price, then gains from piecemeal reform cannot be guaranteed, since reform in one sector can raise scarcity rents to foreigners in other sectors. This possible drag on the benefits of service liberalization can be avoided by targeting sectors with such market access restrictions for early reform.[19]

Product differentiation

For many types of services, the major benefit of international trade and investment liberalization is likely to be increased access to a wider variety of services. This provides benefits to consumers in two ways. First, there are the benefits from services targeted directly to consumers. Second, there are indirect benefits to consumers, since access to a wider variety of more specialized producer services can lower the costs of both goods and service production. As well, there are benefits to local service providers, as they gain access to foreign markets. Many services require an up-front investment in training, research and development, and infrastructure. Access to a larger international market can increase the payoff from such investments.

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[19] One could also avoid losses by taxing the rents from foreign service providers in such sectors. However, this is likely to invite retaliation against domestic service providers in other sectors who have access to foreign markets and may be collecting rents there.

Different modes of supply

Each of the four different modes of supply can yield benefits from increased variety, although each will have somewhat different effects on consumers and factor markets.

First, the different modes of supply will result in consumers having access to a different range of service variety and facing different costs.

The direct foreign investment option requires setting up a branch office and therefore incurring some fixed costs. In smaller countries, this means that, for services where foreign investment is the only option available, consumers will not have access to the full spectrum of services offered in larger economies.

Similarly, if consumers must travel to foreign countries to receive the foreign-provided service, they must incur fixed costs, such as travel and information acquisition. The presence of fixed costs on the consumer side also means that the full range of services available in larger countries will not be consumed by consumers in smaller countries. In both the direct-investment and customer-movement option, further gains from trade would be available if services could be traded directly or if service providers were allowed to cross borders.

On the other hand, the option of direct trade or movement of service personnel across borders both involve relatively lower fixed costs[20], but possibly higher variable costs. This means that the full range of services is available in a smaller country through these two modes, but foreign-provided services will be relatively more costly than local services.

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[20] In the appendix, I model these options as having no fixed costs.

In practice, the costs of providing services by each of the different modes of delivery will vary with the type of service. Moreover, liberalization in any one of the modes would no doubt stimulate technological advances in the cost of delivery via different modes. It is difficult to anticipate the relative costs and benefits of different modes of delivery, thus it is tempting to argue that consumers and service providers should be free to work out for themselves the most efficient mode of delivery—that is, one might expect that a free market would minimize the costs of service provision. It is unlikely, however, that full access via all modes would be the welfare-maximizing option for all countries. There are two reasons for this. First, in these models, firms have market power, and so price is always above marginal cost. This means that free markets do not necessarily provide optimum product variety or optimum outputs. Second, there are terms-of-trade effects due in part to differences in market size. As Markusen and Venables (2000) show, not all countries necessarily gain from a regime switch that allows multinational firms to emerge. When direct trade or movement of personnel is costly, large countries have an advantage, because their large market results in lower costs. Allowing multinationals to set up in smaller countries can erode some of the large country's advantage. Consequently, in their examples, smaller countries tend to gain from access to multinational-provided services, while larger countries may sometimes lose. Further research needs to be done on this issue in a model with all four modes of delivery.[21]

Second, different modes of supply also have different effects on factor markets. Direct trade, movement of customers and movement of service personnel all tend to increase the demand for labour in the exporter's market. Multinational establishment, on the other hand, tends to increase the demand for labour in the host country. The effects of multinationals on specialized service personnel in the host country is more complicated, however, depending on whether foreign and local personnel in a given sector are substitutes or complements in general equilibrium. This suggests that political support for allowing foreign investment may be stronger than for the option of moving service personnel.

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[21] The framework in the appendix could be used for a first pass at this question; however, once asymmetries across countries are introduced, even this simple model would become complex.

Spillover effects of piecemeal liberalization given product variety

Most studies of services trade in models with product differentiation tend to focus on only one service sector. With multiple service sectors, however, liberalization in one sector can have spillover effects on other service sectors. An example illustrates how these effects may be positive or negative (See the appendix for a fuller elaboration.).

Suppose two service sectors X and Y compete for workers with specialized expertise. Also, suppose that this specialized expertise is relatively scarce domestically. Then, consider the effects of liberalizing trade in X but not Y. Since domestic agents can now buy foreign services in X, the relative demand for domestic X services will shrink relative to Y services. That is, trade liberalization in X will result in specialized domestic personnel leaving the tradable X sector and moving to the non-traded Y sector. In fact, the domestic X sector may be completely eliminated after the opening of free trade in X services. However, in this case, free trade in X actually yields a double dividend to domestic consumers—consumers gain from increased product variety in X, as they gain access to the wider variety of foreign X services. They also gain from increased access to a wider variety of services in the non-traded Y sector, because trade has freed up personnel to expand that sector.

On the other hand, if the country is relatively abundant in specialized service personnel, the opposite can happen. Because of the country's comparative advantage in services, the X service sector will expand via trade, and this will draw personnel out of the non-traded Y sector. Consequently, the sector that is not liberalized can be squeezed by trade liberalization in other sectors. This reduces product variety in the non-liberalized sector, and hurts consumers or producers who have a strong demand for its services.

Possible collapse of specialized local services

The discussion above focused on cases where there is symmetry in terms of the variety of services available domestically and abroad. With symmetry, consumers do not care if they consume local or foreign services, as long as the price is the same, but when local and foreign services are not symmetric, it is possible that exposure to foreign trade can cause the collapse of local services as they lose part of their customer base to foreign competition. It is also possible that this can be welfare-decreasing. This is an old result (See Snape (1977) and Curtis (1983).) but is worth re-emphasizing, since it captures some of the concerns of those who resist trade liberalization because they worry that foreign service providers may not be sensitive to local needs.

The basic point can be illustrated with a simple example.[22] Suppose there is some service that is supplied to local residents prior to trade liberalization. This service is an imperfect substitute for a foreign-provided service and has no foreign market as it is tailored to local needs. When the foreign service provider is given access to the local market, the demand for the local service declines.[23] If fixed costs are large, domestic firms providing the local service may be unable to generate enough revenue to cover their costs operating at the new smaller scale. Essentially, by siphoning off some of the local demand, the availability of the foreign service can render the local specialized service non-viable. This can cause the specialized local service to collapse, even though it still might be socially efficient for it to be provided.[24]

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[22] For a detailed discussion of this example, the reader is referred to Appendix A4.

[23] One could imagine scenarios where either an income effect or a complementarity reverses this result, but my focus here is on the case where the local and foreign services are general equilibrium substitutes.

This possible adverse effect on local specialized services is not necessarily an argument against allowing access to foreign service providers. There are several reasons.

First, the issue arises because markets are imperfect both before and after free trade, and the problem can be rectified by providing a subsidy to the local service provider. However, while this solution is simple in theory, it may be difficult in practice, since the government would have to select which local services should get the subsidy. Moreover, care would have to be taken in designing a trade agreement to ensure that such a subsidy is not ruled out as unfair competition. I will return to the discussion of these regulatory issues later.

Second, the possible loss of some localized services need not mean that an economy loses from trade liberalization. In practice, services trade liberalization will increase access to many services not previously available and will provide opportunities for domestic service providers to export. These benefits must be weighed against possible losses in some sectors.

Finally, two additional effects of trade liberalization can tend to work against the Snape result. If trade liberalization raises real incomes, this will tend to increase the demand for the local service. As well, if other services are used as intermediate inputs in the provision of the local service, then freer trade in services can reduce the cost of producing the local service. This would tend to increase the likelihood that the local services survive trade liberalization.[25]

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[24] As shown in Appendix A4, it would be socially efficient to continue to produce the service if the consumer surplus exceeded the unrecovered costs of production.

[25] Technically, the inward shift of the demand curve for the specialized local service caused by the entry of the foreign service provider can be dampened and even possibly reversed due to the increase in local income stimulated by liberalization, while the marginal and/or fixed cost curve may shift down. This could restore the pre-liberalization situation, where the average cost curve was below the demand curve for a range of output levels, leaving the industry potentially viable. The reader is referred to Appendix A4 for the diagrammatic exposition.

Standard models of trade that do not allow for emigration will understate some of the benefits to the average worker of services trade and investment liberalization. This can be illustrated by considering the effects of services trade liberalization on the incentives to emigrate.[26]

Suppose there are two types of workers. The majority of the population is able to work in either goods or services, while a smaller group of people have specialized human capital that is needed for the creation and maintenance of a firm producing a distinct service variety. Suppose also that the relative abundance of the two types of workers is similar across countries, meaning that their incomes are similar, but that the domestic market is relatively small, meaning that there is less variety in services and thus less enjoyment derived from consumption. Finally, we assume that those with specialized human capital vary in their attachment to their homeland. That is, the incentive (either a wage differential or greater consumption possibilities) that would prompt emigration varies across individuals.

If there is initially no services trade, then the variety of available services, and hence the consumption possibilities, is greater in the larger foreign country. This may be sufficient to prompt those domestic workers, both specialized and non-specialized, with the weakest attachment to their homeland, to want to emigrate. In the larger foreign country, immigration of specialized personnel increases product variety and consumption possibilities further, although it might depress incomes of the foreign specialized workers who now face added competition. On balance, the policy of accepting immigrants with these specialized skills might be expected to enjoy political support in the foreign country, since the non-specialized workers who only reap benefits are in the majority. However, the immigration of non-specialized workers would be less likely to find political support abroad, especially if there are any assimilation costs, because immigrating workers would be viewed as competition in the labour market and would produce no immediate tangible benefits in the form of increased product variety.

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[26] For a detailed technical development of this issue, the reader is referred to the discussion of "Piecemeal liberalization as a partial cure for the brain drain" in Appendix A3.

Consequently, the smaller country might be expected to suffer from an exodus of some specialized service personnel i.e. a "brain drain." Moreover, note that, if they do leave, the remaining domestic population is hurt, because domestic product variety falls, increasing the price for services.

If there were full free trade in all services, then all workers everywhere would have access to all varieties, removing constrained access to services as a source of incentives for migration. However, costless free trade in all services is not technically feasible. Nor, realistically, is trade liberalization in services likely to proceed except on a piecemeal basis.

To consider the effects of piecemeal liberalization on migration incentives, we develop a model with two service sectors. In this model, suppose we free up trade in one sector, but not the other. This will increase product variety in the small country in both the traded and non-traded service sectors. In the traded service sector, the increase in product variety is due to the entry of foreign service providers. In the non-traded service sector, the increase is caused by the shift of some specialized domestic service providers from the traded service sector under competitive pressure from foreign providers. Even piecemeal liberalization can therefore reduce the incentives for specialized service personnel to emigrate while, at the same time, yielding extra benefits to those who are unable to emigrate or who like living in their home country.[27]

Although the above results are formally derived from a model in which liberalization is effected by allowing foreign service providers to establish in the domestic market, they would likely hold regardless of the mode of supply that is liberalized. However, liberalization of different modes have different effects on the demand for the services of local specialized personnel. In particular, this can provide an added argument for negotiating reciprocal agreements for temporary mobility of specialized service personnel, even if trade is already liberalized through the establishment route, for example, if granted access to foreign markets, such workers may not only increase their income, but may also gain access to a wider variety of services at home. That is, facilitating reciprocal opportunities for temporary work in larger markets can reduce the incentives for a permanent move to the larger market.

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[27] These results are formally derived in a theoretical framework in Appendix A3.

Regulatory issues

One of the major weaknesses of the analysis up to this point in the paper, and indeed in much of the literature, is that the role of domestic regulation has not yet been considered. Most of the models reviewed and the model outlined in the appendix tend to predict that there are gains to both exporting and importing countries from liberalizing market access in services. There are a few qualifications, particularly if liberalization is only piecemeal. However, for the most part, the implications are much the same as for liberalization in the goods sector. In fact, all of the possible pitfalls of trade liberalization in services have analogues in goods trade. Particularly in the case of producer services, there may be a presumption that the gains from liberalization may be even higher than for goods trade because of their potential to increase productivity in many parts of the economy. Thus, if we were willing to take the leap of faith that goods trade liberalization would be beneficial, why has liberalization in services trade lagged?

The answer is twofold, as was discussed earlier. First, in the case of goods trade, countries were reluctant to sign agreements to allow labour or capital to move freely across borders, preferring instead to liberalize "embodied factor trade" only, and to retain the right to regulate movements of factors in accord with current domestic political and economic needs. Given that many services require movements of factors, this reluctance is a larger barrier to services trade than to goods trade.

Perhaps the critical issue in services trade is the role of domestic regulation. Regulation plays a role in goods production as well. However, in the goods sector, a simple distinction between process and product regulation can go a long way toward resolving regulatory conflicts. Generally, the norm in multilateral trade rules has been that countries exercise their right to regulate goods that may cause potential harm to their citizens via regulations on products. Goods can be inspected as they cross borders; and, under a pure national treatment rule, countries can apply any product standards or taxes desired, as long as these apply equally to domestic and imported goods. On the other hand, it is not generally accepted that countries have the right to try to regulate the process by which goods are produced in other countries. If the process generates a bad product, the product may be stopped at the border. However, as long as the product meets domestic standards, then the exporting country is generally considered to have the right to regulate the production process as it sees fit.

In practice, things are not quite so simple, as shown by recent disputes over such issues as environmental degradation abroad due to production and processing methods, fishing methods that endanger sea turtles, exploitation of child labour, use of prison labour, and so on. Moreover, rules that apply equally to domestic and foreign goods can in practice still be discriminatory, if they are only binding on the foreign products. Thus some version of "effective" national treatment may be called for, and issues pertaining to trade rules on products then become somewhat murkier.

However, although product regulation in international trade is not without its problems, regulatory issues in the services sector are far more complicated. This reflects the fact that much service regulation applies to the process by which the service is produced, or to the qualifications of those providing the service, rather than to the end product. The reason for this is that the product may be difficult to observe. The "product" may be person-specific, as in the case of surgery, and the product itself may be difficult to inspect. The characteristics of the product may only become apparent as time passes, and, moreover, it may be difficult to isolate the effects of any given service provider on the long-run outcome..

Analytical work in this area is complicated, because an informative model of trade liberalization in the presence of regulation must include a reason for that regulation in the first place. Certain types of regulation may be in place only to restrict market access to service providers and thereby protect incomes of incumbent providers. In such cases, it is perhaps not unreasonable to treat regulations as no more than a standard trade barrier. However, other regulations are in place to protect the general public, and one cannot properly analyze the effects of an international agreement that affects such regulations without also modelling the purpose of the regulation.

A simple theoretical example can be developed to illustrate some of the issues that emerge when services trade is liberalized in the context of negative side effects or "negative externalities" that can be generated by the faulty provision of a service.[28] For the purposes here, it is useful to think of these externalities in terms of the *average amount of harm per unit of the service provided*. Because of these harms, regulation is imposed on the service providers both domestically and abroad. The issue then turns on the relative effectiveness of the domestic and foreign regulations in reducing the harms. If the foreign regulatory regime is more effective than the domestic regime, the average amount of harm per unit of the foreign service will be less than per unit of the domestic service. In this case, trade liberalization in this service sector is unambiguously welfare-enhancing, since, in addition to the standard gains from trade, there are benefits in terms of reduced harms, as better regulated foreign service providers take up part of the domestic market. If, however, the domestic regulatory regime is more effective, it is an open question whether the gains from trade outweigh the increased average level of harm that accompanies the entry of less well-regulated foreign service providers.

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[28] This example is developed in formal terms in Appendix A2, in the section "Regulation with negative externalities." In many cases, the most appropriate modelling approach would be to explicitly model information and reputation problems, but this approach is left for future work. However, in many cases, externalities are relevant. Transportation services can cause accidents; medical errors may be costly to the general public when there is public insurance, and they may also have public health repercussions; education services generate externalities; and faulty construction practices can have impacts on those who did not purchase the services directly, and recourse via the courts may be costly.

One of the implications of this analysis is that a country should pursue bilateral agreements (e.g. mutual recognition agreements) with countries whose regulatory regimes are as good or better than the domestic regime, since opening up trade with these countries will be unambiguously welfare-enhancing. Meanwhile, multilateral agreements become problematic unless a means can be found to either exclude suppliers from countries with weaker regulatory regimes, unless a way can be found to subject such firms to increased regulatory scrutiny.

Of course, as is well-known, the presence of externalities does not undermine the standard arguments for free trade, provided that these externalities can be internalized. However, in practice, this can be difficult in the case of services, because it will typically require that regulations be imposed on the process by which foreign services are produced, or on the qualifications of foreign service providers. Suppliers from countries with weak regulatory systems would have to be more intensely regulated locally. As well, there may be more difficulty enforcing regulations for suppliers from some countries than others, and this also would tend to push up regulatory costs for firms from such countries. Because regulatory intensity would have to vary with the supplier's source country, implementing a national treatment regime may also be problematic. If local authorities retain enough regulatory flexibility to deal with these issues, then, as we saw above, opening up the market to local suppliers will improve welfare. However, if local authorities are constrained by national treatment rules, then considerable care must be taken in liberalizing trade.

This analysis also suggests that multilateral liberalization may be easier via some modes of supply than others. For example, if the service is provided via foreign direct investment, it is fairly straightforward to apply domestic process standards and regulations to the foreign company's local service provision facility. Moreover, the issues here are much the same as the application of process standards to foreign firms producing goods in the home country.

However, the other three modes of supply all raise more complex regulatory issues. If a service provider works in both the home and foreign country, then that provider could fall under local rules when working locally, which may involve excessive regulatory costs, if the service worker is satisfactorily regulated by the foreign country. Service providers from some countries may have received satisfactory training, while those in others may not. Ensuring that all foreign providers meet domestic standards may be costly. In fact, it is possible that a rule requiring non-discriminatory access to all (subject to domestic regulation) may actually reduce the gains from trade by imposing unnecessarily high regulatory costs.[29] On the other hand, extension of access only to a select few countries with similar or higher standards would incur few costs.

Similarly, if the service is sold over the border, access to the local market could be made conditional on meeting certain standards. Again, though, it may be efficient to vary the degree of regulatory scrutiny across sources.

Finally, if the client travels to a foreign country to receive the service, then again, regulatory scrutiny would have to vary across sources. For example, if training programs are offered in a foreign country, the domestic government would likely recognize some programs as meeting domestic standards for certain occupations, but not others. The costs of ascertaining this would likely vary across source countries and, while in principle a national treatment rule could imply application of uniform standards to all programs in all countries, in practice, the implementation of such a rule may be costly.

So, while at an abstract level the presence of domestic regulation does not detract from the standard argument for gains from trade, in practice, it raises a number of difficult problems. This suggests that liberalization will likely have to proceed along different tracks for different services and different modes of supply. In some cases, liberalization may have to be delayed because of the complexity of multi-jurisdictional regulatory issues.

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[29] In fact, the costs of regulation and the problems of designing national treatment rules for service providers operating in multiple jurisdictions may render foreign direct investment a superior mode of supply for some services, even when it may not be the least costly way of servicing the local market when regulatory issues are ignored.

Local content: Another regulatory problem

A different type of regulatory problem arises when there is a *positive* externality or spillover from local service production. That is, suppose there is some benefit to society at large from domestic consumption by an individual of some domestically produced service. For example, this may be the case with domestically produced education or cultural services. It may also be possible that domestic consumption of some local services helps to create a sense of community as well.

If there is a collective decision that some such service is beneficial to the community in a way not captured by market prices, the provision of this service at an optimal level requires either a production subsidy or public provision of the service. In technical terms, direct public provision of the service or a subsidy to ensure optimal levels of private provision *internalizes* the externality and thus removes the market failure.

Normally, granting access to foreign providers can be welfare-improving, both because of potential comparative advantage effects, and because of the benefits from increased product variety. However, because of the positive externality associated with the local service, it is not desirable for foreign and domestic firms to compete on a level playing field, since that can lead to sub-optimal provision of the local service.[30]

Consequently, care must be taken in defining the terms under which trade liberalization occurs. Granting national treatment status to foreign service providers would be a mistake in such circumstances, if national treatment required that any subsidies made available to local service providers were also made available to foreign providers who sold services in the domestic market (in any of the modes of delivery).

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[30] This argument is similar to, but not the same as, the optimum product variety argument given above. In that case, fixed costs meant that a local variety was squeezed out by foreign firms. In this case, there need not be any fixed cost.

If the government loses the flexibility to give a discriminatory subsidy to local service providers, then it can lose the ability to internalize the externality, and trade liberalization can reduce welfare because of the constraints it places on the electorate's ability to get the government to set appropriate internal domestic policies.

It is important to emphasize that this analysis is not an argument against trade liberalization. As noted above, the first best policy for this country is free trade combined with internalization of the externality. Rather, the point of this analysis is that careful consideration must be given to the rules under which a liberal trading regime operates. For some types of industries, there are no externalities, and a national treatment rule may create no issues. However, for other types of industries, this type of rule can cause problems, because it eliminates the flexibility of the government to deal efficiently with internal domestic-policy concerns. Since national treatment is the foundation of trade liberalization, however, an alternative interpretation of this analysis is that the government may want to exempt certain sectors from a services trade agreement to ensure that it maintains the flexibility to deal with domestic policy objectives.

Domestic versus foreign regulatory costs

When the government is engaged in regulation, it often enacts policies that harm some firms or consumers (by reducing their opportunities to generate income). In some cases, such as when land is expropriated to build a highway, those harmed by the government decision can reasonably expect compensation. In other cases, such as when air-quality regulations are tightened, consumers and firms are expected to bear the compliance costs themselves. Each country's legal and political systems have a set of rules and traditions that govern such problems, and some are more effective than others.

One of the benefits of trade agreements is that domestic and foreign firms can expect to operate under similar rules when servicing a given market. This means that foreign firms can have more confidence that investments they make to service a given market will not lose value because of arbitrary discriminatory regulation. However, care must be taken in designing the set of rules under which foreign firms can expect to receive compensation in the event that a move by the domestic government reduces their market access or the value of their investment.

If foreign firms can appeal either directly or through their governments to international dispute-settlement panels, while domestic firms rely only on the internal legal system, then foreign and domestic firms have different avenues of redress. This may create an imbalance between the power of domestic and foreign firms in negotiating with governments when regulatory changes are considered. Thus, while granting market access to foreign firms is likely to be beneficial to the home economy, care must be taken about the legal basis under which this access is granted.[31]

Other issues

A number of issues relevant to services trade and investment liberalization have not been explicitly covered in this chapter, but are worthy of attention in future work.

Asymmetric information issues

For many types of services, important information about the client may not be in possession of the service provider (e.g. an insurer may not have full information about the driving safety of an applicant seeking auto insurance, who is, of course, in full possession of this knowledge); or, conversely, important information about the service provider may not be known to the client (e.g. a patient may not have full information about the ability of a given physician in performing a procedure that the patient requires, while the physician would know). These situations provide examples of the problem of *asymmetric information*. In some cases, these types of issues can be dealt with adequately in the market via reputation effects. However, in most cases like this, there is also government regulation. The problem of asymmetric information has been widely studied in the economics literature, but there has been relatively little attention given to the international provision of services that are subject to asymmetric information. Dixit (1990), Grossman and Horn (1988), and Bagwell and Staiger (1989) have done some work in this area, but there is a need for more work to study the implications of different modes of supply and their interaction with the regulatory systems of the client and provider countries.

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[31] See Markusen and Venables (1998) for a discussion of the relative merits of right-of-establishment rules in a developing country context.

Quality of services

A benefit of international trade not yet discussed is that, by increasing competition and creating a large market, it enables consumers to gain access not just to more services at possibly lower costs, but to higher-quality services as well. There is some literature on the effects of trade on product quality, but more work here would also be fruitful. The effects of trade on the quality of services may be particularly difficult to measure, and, if this effect is ignored, the estimated benefits of free trade would be biased downward.

Effects of services trade liberalization on the structure of firms

Many services facilitate transportation and communication between firms. As well, they affect the property rights regime and the efficiency with which contracts are enforced. Firms' decisions about whether to produce inputs internally or contract with outside firms (either domestic or foreign) are determined by transportation costs, communication costs, legal costs, and various other types of transaction costs. Services trade liberalization affects these costs and therefore affects the organization of firms in terms of equilibrium structure and scope of their activities. Much trade theory tends to avoid a detailed modelling of the structure of firms. However, the issue of the endogeneity of firm structure is likely to be very important for some aspects of services trade liberalization.

Networks

Many services are provided via networks (such as telecommunications, distribution, air transport, etc.). A careful analysis of trade and investment liberalization in these sectors requires a model of networks that interacts with the trade regime. Little work along these lines in an international context is available.

Political economy

The interaction with the domestic policy process is perhaps the major issue in services trade liberalization. Many discussions of this issue adopt the targeting approach due to Bhagwati and others. In this approach, free trade is the best policy, provided benevolent governments use the appropriate instruments to correct market failures. In practice, governments do not act this way; domestic policy is a political compromise. This suggests that the effects of service trade liberalization should be more appropriately analyzed in a model with an endogenous domestic policy process driven by political economy considerations.

Empirical studies

Three types of empirical studies are potentially relevant to the theme of this paper:

- studies that attempt to measure the size of barriers to trade and investment in services;
- empirical studies that attempt to test some of the hypotheses about the consequences of services trade; and
- computable general equilibrium models that simulate the effects of trade liberalization.

I will discuss each of these areas in turn; however, as noted at the beginning of this paper, my review of the empirical evidence will be relatively brief, because there already exist some good recent surveys of this work.[32]

Measuring the size of trade barriers

Measures of the size of trade barriers are very important, because they can help policymakers to identify sectors in which domestic access to foreign markets is restricted. They can also give an indication of which domestic sectors will be most exposed to increased competition when trade is liberalized. As well, measures of the size of trade barriers are an essential input into computable general equilibrium studies. One cannot attempt to simulate the effects of a reduction of trade barriers without good estimates of the barriers. Also, time-series measures of trade barriers are also needed for empirical work that tests hypotheses about the effects of reductions in trade barriers.

The literature on measuring trade barriers in services has been recently surveyed by Schembri and Chen (2001), as well as in the first part of Brown and Stern (2000). This literature continues to face several major difficulties. Most trade barriers take the form of regulatory restrictions, rather than simple taxes on trade. This makes them very difficult to quantify. In most cases, one cannot assess the protective effect of a regulation without having a model of the economy to predict how trade flows and prices would be different in the absence of the regulations. This means that it is very difficult to measure trade barriers without first having a good understanding of the fundamental forces driving services trade.

As well, many regulations in the service sector that impede trade exist because of governments' responsibilities to address important public-policy problems such as dealing with asymmetric information problems, and protecting health and safety. This makes it very difficult to isolate the protectionist effect of regulatory barriers to services trade. In many cases, there may be a different set of regulations that would address public-policy concerns, but in a less trade-distortionary way. It is difficult for an analyst to measure the potential drop in the level of protection that would come about from introducing less trade-distortionary regulations without a great deal of institutional knowledge about specific sectors. This suggests that much of the work on measuring the size of trade barriers will have to proceed on a sectoral basis, while, at the same time, remaining cognizant of potential general equilibrium effects. Fink, Mattoo and Neagu (2001) provide a good example of the sectoral approach by studying barriers to trade in the maritime shipping sector.

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[32] See Hoekman and Braga (1997), OECD (2000), Schembri and Chen (2001), and Markusen and Maskus (2001). (The latter focuses on general equilibrium models with multinational firms; the theory behind this was surveyed above. This is the literature that comes closest to endogenizing the mode of service supply.)

Hypothesis testing

The second type of empirical work that is relevant here would explicitly attempt to test hypotheses about the forces determining the direction, volume and effects of services trade. For example, it would be useful to know whether trade in goods and services are substitutes or complements; and whether trade in services is generated more by differences between countries, or by product differentiation and market niche motives. As well, it would be useful to assess the actual effects of previous trade liberalization on productivity, wage distribution, access to product variety and other variables of interest. Unfortunately, there is relatively little work that explicitly assesses services trade. There is a great deal of recent work that attempts to test the major theories of international trade, although the focus has been on goods trade, primarily because of data.

Markusen and Maskus (2001) survey work on general equilibrium models of multinational firms. This is particularly relevant for services trade, because commercial presence (foreign direct investment) is one of the most important modes of supply. They find that there is considerable support for the view that similarities between countries tend to be strongly associated with the presence of multinational firms. This is consistent with the view that commercial presence is a substitute for direct trade in services. As well, they find support for the notion that foreign direct investment is complementary with trade in intermediate products. That is, the establishment of foreign branches tends to increase trade in intermediate goods and services.

Computable general equilibrium models

The third type of empirical work, that based on computable general equilibrium (CGE) models, is perhaps the major source of estimates of the consequences of the effects of trade liberalization. In this literature, the analyst specifies a model that is based on one or more of the theories discussed in the previous section and implements it on a computer. The use of computers allows the models to be implemented on a larger scale, with potentially many different sectors and types of inputs. To implement the model numerically, the analyst requires many parameters, such as demand and supply elasticities. These are sometimes estimated and sometimes taken from the literature. As well, some parameters are left free, so that the model can be calibrated to replicate the endogenous variables for a base year. Once the model is calibrated, simulations can be run to assess the effects of changes in trade barriers on the pattern of trade, prices, income distribution and welfare.

CGE models are attractive, because they yield precise quantitative predictions about the effects of trade liberalization. However, they do not really constitute empirical evidence that can be used to support one particular hypothesis about the effects of trade liberalization over another. This is because the results from the models are dependent on what theory the analyst uses to set up the model in the first place. The results can be very sensitive to how the model is set up. As well, because most such models are calibrated, rather than estimated, one cannot calculate confidence intervals to help assess the significance of the predictions. For these reasons, one should resist the tendency to read too much into the magnitudes of the numerical estimates of the effects of trade liberalization that are generated by these models.

CGE models are, however, a useful complement to analytical theory. As mentioned above in the survey of the theoretical literature, there are many cases in theory where there are conflicting forces at work. For example, in product-differentiation models, a worker might be predicted to lose via a fall in wages as a result of trade liberalization; at the same time, the worker might be predicted to gain because of lower prices and increased variety of products available. A CGE model helps to identify which types of forces are likely to be "large" and which may be of only second-order importance. If enough sensitivity tests are run, this can help to generate a richer understanding of what the different theories predict about the effects of trade liberalization. CGE models can therefore help to generate hypotheses that empirical researchers can investigate. Moreover, useful synergies can develop. CGE models can help to generate hypotheses that can be tested, and the results of the hypothesis testing can be used to help develop better CGE models.

The CGE literature on trade in services has been thoroughly surveyed very recently by the OECD (2000). However, it is worth pointing out how some of the results from these studies relate to the theoretical work discussed above.

There are two very broad classes of CGE models available for studying services. In some models, services are treated very much like goods, and there is no allowance for different modes of supply. Some of the models allow for trade to be generated both by factor-endowment differences as well as product differentiation. Some recent models [starting with Petri (1997)] allow for multinational firms, which endogenously choose whether to export or to set up a branch plant. As well, some models allow for producer services as an intermediate good along the lines of Markusen, Rutherford and Tarr (2000).

All of these models predict that liberalization of services trade and/or investment will increase real global income. However, the distribution across countries of the gains from liberalization tends to be very sensitive to how the models are specified.

In models without endogenous treatment of foreign direct investment, the gains from services trade liberalization tend to be positive throughout the world. Several of these studies provide estimates of the gains to Canada. Brown et al. (1996) find that Canada's GDP would rise by about 0.7 percent from a 25 percent reduction in services trade barriers. Chadha et al (2000) simulate the effects of a multilateral 33 percent reduction in services trade barriers in the year 2005 and find welfare gains throughout the world. Canada's welfare measure rises by 2.8 percent. Benjamin and Diao (2000) use a model that lacks some of the product differentiation channels of the previous two studies, and finds smaller, but still positive, welfare gains of 1.35 percent for Canada from multilateral services trade liberalization. Overall, these studies suggest that liberalized services trade will generate gains to countries throughout the world, and that Canada will share in these gains. The magnitude of the overall gains is relatively small, considering that the reductions in trade barriers are large, but the magnitudes of the gains are similar to those that were obtained in earlier simulations investigating the effects of freer goods trade.

Earlier in this chapter, it was pointed out that theory does not unambiguously predict that countries will uniformly gain from services trade liberalization. First, it was noted that liberalization of trade in services will affect world prices of goods. This raises the possibility that some countries may experience terms-of-trade losses from services trade liberalization. Second, it was noted that, because services trade liberalization will be piecemeal, the types of trade barriers and the sequencing of liberalization could affect whether or not all countries gain. In particular, it was suggested that the distribution of the rents accruing to producers that benefit from protection could influence welfare outcomes. Many economists tend to dismiss these types of concerns as being interesting in theory, but of little practical importance. Indeed, when looking at the CGE studies mentioned above, this scepticism finds support. For example, Brown et al. (1996) calculate terms-of-trade changes resulting from service trade liberalization, and find that Canada's terms of trade do in fact worsen slightly by 0.1 percent, but this effect is more than offset by other gains from trade and thus Canada gains overall.

However, two recent studies that explicitly treat foreign direct investment as a mode of service supply find very different results. These studies suggest that terms-of-trade effects and other seemingly second-order concerns cannot always be dismissed as minor. Dee and Hanslow (2000) find that services trade liberalization raises overall world income, but that both the United States and Canada, as well as some other countries, experience small welfare losses from services trade liberalization. Their model allows for liberalization of restrictions on foreign direct investment as well as on trade. Welfare losses can potentially come from three sources. First, removal of restrictions on foreign investment can divert capital to countries that previously had relatively high barriers to investment. Second, barriers to entry generate rents, some of which accrue to owners of foreign capital. With liberalization, these rents are eroded by competition, and thus countries that are important sources of foreign direct investment can lose. Finally, there are terms-of-trade effects as discussed above. Dee and Hanslow attribute the loss to the United States as primarily due to rent losses, while losses to Canada are primarily due to terms-of-trade effects. Negative terms-of-trade effects for Canada also appeared in Brown et al. (1996) as noted above, but these effects are magnified in the Dee and Hanslow study by the increased capital mobility. Dee and Hanslow express considerable caution in interpreting their results because of data problems.

Brown and Stern (2000) seek to improve on their previous work (Brown et al., 1996) by incorporating an explicit treatment of foreign direct investment, as well as some of the production structure from Markusen, Rutherford and Tarr (2000). Their results are surprising in that they obtain relatively large predictions of welfare effects from services trade liberalization. They again find that the world gains as a whole, but that some countries lose. They report six different simulations, each with various different assumptions on capital mobility or demand. Canada loses from a multilateral reduction in services trade barriers in each of these scenarios, with the changes in welfare ranging from −0.71 percent to −7.56 percent. Conversely, economies such as Japan and Hong Kong experience large gains. The United States gains in some scenarios, but loses in others. Brown and Stern note that welfare losses in their model tend to be associated with capital outflows due to increased opportunities for investment in other parts of the world.

Finally, it should be noted that these results all come from scenarios where everybody liberalizes services trade. Brown and Stern did not run scenarios where the rest of the world liberalizes, but Canada does not. They speculate (on p. 20) that, in such scenarios, the losses to a country like Canada would be even higher, if Canada did not liberalize. This echoes a point made in the theory section earlier in this paper. If the rest of the world liberalizes, then world prices change, and a country may lose. However, these losses are more or less beyond the control of the losing country. The theory predicted that maintaining barriers in the face of liberalization by everyone else would, in fact, compound losses.

As noted above, CGE studies should be viewed as an adjunct to theory. They help us to understand which types of forces may be important and how different forces interact with each other in sometimes surprising ways. One should not read too much into particular numbers generated for particular countries.

There are two conclusions from recent work in this area. First, the predictions for individual countries are very sensitive to the modelling structure. This suggests that we need to develop a much better understanding of the forces that are driving trade and investment and of how regulations in the services sector translate into trade barriers. In other words, the application of CGE models to the services sector is a relatively new undertaking; the models are useful for research purposes, but must be treated with caution as a guide for policy. Second, the models do demonstrate that some of the complexities and ambiguities that arise in a theoretical treatment of services trade liberalization cannot be easily dismissed as being of second-order importance. The sequencing of liberalization and its interaction with pre-existing goods trade may well be important in influencing welfare outcomes.

Policy Implications

The preceding discussion suggests that there is much work remaining to be done, before we have an accurate assessment of the benefits and costs of services trade liberalization. However, a few preliminary policy directions may be suggested.

Liberalize in cases where regulations mainly protect against entry

In cases where the main effect of regulations is to restrict entry and to protect incomes of incumbent service providers, there is a strong case for exploring the possibilities of further liberalization. Increased competition and greater variety of services available from foreign service providers will benefit both producers who use services as intermediate goods and also final consumers. As well, potential Canadian service exporters will benefit from increased opportunities arising from access to larger markets. In such cases, liberalization via each of the four modes of delivery should yield gains, and competition in the market should help to ensure the most efficient form of service delivery. However, the option of allowing foreign service providers to move personnel across our borders would have repercussions for our general approach to labour mobility and should be considered in the context of the larger issue of how Canada wants to treat temporary movement of workers in any sector.

Gains come from imports as well as exports

Canada currently has a trade deficit in services. Further liberalization may or may not increase this deficit. However, the deficit or surplus in services trade is not an indicator of the benefits to the economy from services trade liberalization. All consumers benefit from access to a wider variety of services provided more cost effectively. At an aggregate level, these types of benefits can be substantial, even though individual consumers may not see the gains as large enough to justify lobbying for liberalization on their own. As well, liberalization of producer services can enhance productivity in other parts of the economy, including other export sectors.

Increased trade in services can help to attract and keep talented people in Canada

In cases where some services are not tradable directly, service providers may find that they are better off in large markets than in small markets. Some of them will have an incentive to emigrate to take advantage of increased business opportunities but also to take advantage of a wider variety of services for their own consumption. Moreover, the destination countries will have incentives to allow them to immigrate. The loss of such local service providers can have negative effects on those who either choose not to leave or cannot leave; this reflects the loss of local product variety and increased costs due to increased difficulty in accessing producer services. Liberalizing services trade via any or all of the four modes of delivery can create added benefits, since it may reduce the incentives to emigrate. By increasing the range of services available locally, trade makes the local market a more attractive place in which to live. Also, by providing access to foreign markets, trade agreements make available to local service providers increased opportunities to pursue their careers from a base in the local market.

Identify complementarities

Many types of services are complementary to goods trade. As well, many services are complementary to other types of inputs within the same sector, at either a partial or general equilibrium level. If granting access to foreign service providers increases the demand in the same sector, then broad political support should be expected. The movie and television production industry seems to be an example where this approach has worked well (e.g. allowing foreign stars to act in local productions increases demand for local actors).

Be aware of possible linkages between liberalized and non-liberalized sectors

Because services trade liberalization will likely proceed on a piecemeal basis, it is important to be aware that possible spillover effects from liberalization could be important in some sectors but not in others. As the analysis indicated, when product variety is important, liberalization in one sector can, in some circumstances, squeeze and reduce product variety in other sectors. As well, when a few foreign service providers have privileged access to the local market, they earn rents from this access, and piecemeal liberalization can increase these rents, which shows up as a cost to liberalization. One way to mitigate this effect is to try to liberalize in sectors where there are rent-generating entry barriers.

Care must be taken to ensure that the details of the free trade agreements leave governments with sufficient regulatory flexibility to deal with domestic-policy concerns

In those cases where regulations deal with market failures, such as health and safety regulation, consumer protection, correction of externalities, etc., care must be taken to ensure that governments maintain enough flexibility to regulate effectively and to be able to change their regulatory approach in response to demands of the electorate and innovative ideas in how to regulate. In some cases, simple mutual recognition agreements are likely to be the most cost-effective approach to regulation; however, this may not a desirable approach in all sectors or for all countries within a sector. In other cases, harmonization of standards may be desirable, although this may only be feasible within a subset of countries. In other cases, a national treatment rule requiring that all providers meet Canadian standards would be appropriate. The general conclusion here is that the details of liberalization are likely to be very important in cases where domestic regulations are important.

National treatment rules can be problematic for some types of services

For some types of services (such as some aspects of culture and education) there are positive externalities from local provision. Moreover, the perceived benefits from local provision may change over time as cultural norms change. Governments should maintain the flexibility to give preference to local service providers in such cases. If national treatment with respect to subsidies is granted to foreign service providers, governments may be unable to internalize the externalities that are prevalent in these sectors. This suggests that some sectors will have to be exempted from full liberalization for regulatory reasons. Moreover, flexibility in this area must be maintained, so that present views on the role of government do not unduly constrain future government policies.

Conclusion

The main forces yielding benefits and costs in services trade liberalization are much the same as those that applied to goods trade liberalization. Gains arise from comparative advantage and access to a wider variety of services. Increased competition erodes market power, and access to large markets can allow firms to increase their productivity via scale effects. Whether the potential gains are larger or smaller than in the case of goods trade is difficult to assess. Some types of producer services can have potentially larger productivity-enhancing effects. Also, trade in services can stimulate trade in goods, generating yet further gains from trade. However, pre-existing trade in goods, as well as pre-existing services trade means that some of the potential gains from trade in factor services have already been realized via embodied factor services trade.

The potential costs of services trade liberalization are also familiar from our experience with goods trade. Trade liberalization can displace workers and firms, and redistribute income: some people gain, while others lose. If there are market failures that are not corrected by governments, trade can sometimes exacerbate these distortions. As well, when trade liberalization proceeds on a piecemeal basis, it can have unintended harmful spillover effects into other protected sectors of the economy.

However, while there is not really much difference between services trade and goods trade at an abstract level, there are major differences at a practical level. Because many services cannot be directly traded for technical reasons, liberalization of services trade requires liberalization of rules affecting foreign direct investment and the movement of personnel across borders. Governments have been willing to allow both but have been reluctant to commit to multilateral agreements on these issues.

Because services are a process, government regulations of services are process rather than product regulations. Process regulations are common in the case of goods, but these regulations usually only apply to production within a country – once goods enter into trade, product regulations tend to take over. However, since foreign service providers tend to be selling a process rather than a tangible good, regulations affecting imports will be regulations affecting the process by which the service is produced. That is fundamentally different than what goes on in goods trade and is perhaps the most serious impediment to services trade liberalization.

One of the key insights from international trade theory is that free trade is beneficial for a country, as long as governments maintain the flexibility to correct market failures and meet equity concerns. Rather than hindering efforts to achieve high levels of environmental quality, a healthy and safe work environment, or social services, trade can actually enhance these efforts by raising national incomes and creating options that wouldn't otherwise be available. The challenge is to design a set of trade rules that preserve this flexibility while, at the same time, increase opportunities for Canadians to gain access to foreign markets, and increase opportunities for Canadian consumers to access foreign services. This is perhaps the major issue in services trade liberalization, but one that has received relatively little attention in the formal literature on international trade and investment. More work in the area needs to be done.

Technical Appendix

This appendix provides some technical background to support some of the arguments in the main text, adding some details and rigour in developing the conclusions. As well, it explores the possibility of addressing some of the gaps in the literature in a very preliminary way.

A theoretical framework

Ideally, one model could combine features of the main approaches to modelling services trade; and, in fact, some papers do use aspects of different approaches. The Markusen and Venables (2000) paper nicely integrates the comparative advantage motive for trade with the product differentiation motive. It also allows for two modes of supply: direct trade and multinational firms. One could, in principle, extend this approach to allow for producer services and other modes of supply, including movement of persons and movement of consumers.

However, to gain insight into the main channels through which benefits and costs of service trade liberalization will be realized, it is useful to focus on simple models that highlight one or two important forces. The more comprehensive the model, the more difficult it is to understand the issues. Computer simulation models can be useful to investigate how the different forces interact with each other, but one has to remember to approach such models with just as much scepticism as pure theory models, since the results can be sensitive to model specification and choice of parameters.

In this appendix, I set out a simple theoretical framework to analyze the benefits and costs of services trade at a general level, without focusing on the special characteristics of individual services. I then select three special cases to highlight a few important issues. The approach here is not a new model—the first part is simply an application of the standard competitive trade model, and the second part is a simple version of a differentiated products model based on Brainard (1993) and Markusen and Venables (2000). I investigate all four modes of service supply, but do not attempt to render the choice of mode of supply endogenous—it is determined by the regulatory system or a trade agreement. The purpose is to give the reader a flavour of the approaches and to highlight a few key issues.

Throughout, I assume there is pre-existing free trade in goods. One could allow for trade restrictions in the goods sector. This would add some complications—as is well-known, for example, increased capital mobility need not improve welfare, if it stimulates output in protected sectors. However, these issues are fairly well-understood, and, given the relatively low trade barriers in the goods market in Canada at this point, I just focus on the case of free goods trade.

I assume either one or two service sectors at various points in the analysis. Most of the literature tends to assume only one service sector; however, because services trade liberalization will likely proceed on a piecemeal basis, it is useful to allow for more than one service sector to consider the spillover effects of liberalization from one sector into another unliberalized sector.

I begin by assuming that services are a homogeneous product produced with constant returns to scale and directly consumed by consumers. This facilitates a discussion of comparative advantage motives for trade, and the interaction between trade in factors, and trade in final services and goods.

I then suppose that services are a' differentiated product along the lines of Krugman (1980), Brainard (1993), and Markusen and Venables (2000), and compare the four different modes of supply. A firm may export directly, send service providers to a foreign country, set up a branch office, or service foreign consumers at its home office. I assume that moving workers across borders is costly, and the consumers must pay fixed travel costs to come directly to the foreign providers. The choice of mode of supply is not, however, endogenous in the model; that is left for future work.

Finally, I suppose that the services sector is regulated, and I investigate the implications for trade liberalization. I model regulation only in a couple of very simple stylized ways, and revert to a very simple version of the competitive model. I first consider a case where there is a positive externality from production of the home variety of a service. This captures issues such as a desire to promote domestic culture or domestic public education. I then consider the possibility that service providers may unintentionally cause harm as a side effect of their activities and model this as a negative externality.

Because of this, service providers are regulated. However, regulation is costly and therefore regulatory intensity will vary across countries.

A1. Service trade and investment liberalization in a standard competitive trade model

Let Z be a vector of tradable goods, and let X and Y be services. In general, goods and services can be used as both final and intermediate goods; if there are intermediate goods, then outputs in the model are treated as net outputs. There is a vector of factor endowments v. There is a representative consumer with preferences represented by an expenditure function $E(p_Z,p_X,p_Y,u)$. The production side of the economy is convex and perfectly competitive, and so can be represented with a national revenue function $G(p_Z,p_X,p_Y,v)$. Both E and G satisfy the properties implied by the standard competitive trade model (see Dixit and Norman, 1980, or Woodland, 1982). Compensated demands can be recovered from E by differentiating with respect to prices, and net outputs can be recovered from G by also differentiating with respect to prices. Factor prices can be recovered from G by differentiating with respect to outputs.

I assume that there is free trade in goods, but that trade in services may be restricted either by market access restrictions (captured here by quotas) or by regulations that raise the cost of servicing the local market, which I capture here by including trading costs that are proportional to the foreign price. The budget constraint of the economy is given by:

$$E(p_Z,p_X,p_Y,u) = G(p_Z,p_X,p_Y,v) + \lambda_X M_X[p_X - (1+\alpha_X)p_X^*] + \lambda_Y M_Y[p_Y - (1+\alpha_Y)p_Y^*]$$

where an asterisk indicates the foreign price, M_i is imports of i, λ_i is the fraction of quota rents accruing to the home country, and α_i is a measure the "red tape" costs of selling the foreign service in the home market.

Suppose that there is initially free trade in goods, so that p_z is determined in world markets. Suppose that services in the X sector are import-competing and are initially not traded. Services in the Y sector are imported but may be subject to a binding quota. It is straightforward to handle exported services in the same way; I focus here on imports for expository purposes.

Let us now consider the welfare effects of liberalizing trade of X services. Totally differentiating and rearranging yields:

$$E_u\, du = \lambda_x[p_x - (1+\alpha_x)p_x^*]dM_x - \lambda_x M_x p_x^* d\alpha_x - (1-\lambda_x)M_x dp_x \\ - (1-\lambda_y)M_y dp_y + \lambda_y[p_y - (1+\alpha_y)p_y^*]dM_y - M_z dp_z \quad (1.1)$$

Services trade liberalization will affect welfare through both direct effects and spillover effects. To understand these effects, it is useful to consider different special cases.

Unilateral liberalization in a small country;
Home gets the quota rents

If Y is protected with a quota, then $dM_y = 0$ and, if Home gets the quota rents, then $\lambda_x = \lambda_y = 1$; and, if it is small, then $dp_z = 0$. Then (1.1) reduces to:

$$E_u\, du = [p_x - p_x^*]dM_x \varepsilon 0. \quad (1.2)$$

Unilateral services trade liberalization in the X sector, without liberalizing Y must improve welfare in this case via a direct gains-from-trade effect driven by comparative advantage, provided that the foreign and domestic prices differ. As noted in the main text of the paper, it is possible that trade in goods alone equalizes services prices across countries, and, in this case, there are neither losses nor gains from services trade. However, if services prices differ, there are gains from trade whether Home exports or imports X, although here I focus on the importing case.

It is noteworthy that piecemeal reform is welfare-improving in this case. If instead, Y were protected by tariffs, then trade liberalization in X could exacerbate the distortion in Y and actually reduce welfare. However, as Falvey (1988) showed, this is not the case when there are quota restrictions in place and Home collects the quota rents. This is an important result, since services trade liberalization is likely to proceed in a piecemeal fashion.

Small country, multilateral liberalization

Somewhat paradoxically, however, *multilateral* liberalization may not improve Home's welfare. Global liberalization of services will generate general equilibrium effects that can be expected to affect tradable goods prices (Z prices). In this case, we have:

$$E_u\,du = [p_X - p_X^*]dM_X - M_Z dp_Z \qquad (1.3)$$

These price effects may benefit or harm Home, depending on whether Home's terms of trade improve or deteriorate on average. Although these terms-of-trade effects could potentially generate losses, there is nothing that Home can do about it on its own. Home cannot offset globally generated terms-of-trade effects by failing to liberalize itself. In fact, by failing to liberalize, Home suffers from the terms-of-trade effects, but fails to reap the direct gains from trade. Home could potentially attempt to avoid losses from a negative terms-of-trade effect by forming a coalition with other countries to try to affect the type of global liberalization that occurs and thereby influence the terms-of-trade changes. However, these effects will be difficult to predict and thus such a strategy is impractical.

Large country

If Home is a large country, then it is big enough to affect world prices. In this case, a standard gains-from-trade result does not hold. Referring to (1.3), since Home is big, even unilateral service trade liberalization can affect other tradable goods prices. Home gains, if the direct gains from trade offset any potential terms-of-trade deterioration. This is an empirical matter.

Red tape as the only source of protection

Henceforth, I assume that there are no terms-of-trade effects in the goods market in order to focus on other issues; this can be justified if Home is small and unilaterally liberalizes. Extending the analysis to include terms-of-trade effects if they arise is straightforward.

If the only source of protection is regulatory costs (so that there are no quotas restricting market access), then the effect of a change in regulatory costs that improves market access in X but not Y is:

$$E_u\,du = -\,M_X p_X{}^* d\alpha_X > 0$$

since $p_X = (1+\alpha_X)p_X{}^*$ and $p_y = (1+\alpha_y)p_y{}^*$, and $d\alpha_X < 0$; and since I have ruled out terms-of-trade effects in the goods market. If services trade restrictions take the form of regulatory or trading costs, then piecemeal reform is again welfare-improving.

Foreigners get all the quota rents

If a limited number of foreigners are allowed to operate in the domestic market, they would be paid prevailing domestic prices, and so would collect the quota rents themselves. In this case $\lambda_X = \lambda_y = 0$, and, if the country is small, then (1.1) reduces to:

$$E_u\,du = -\,M_x dp_x - M_y dp_y$$

If Home imports X, then $-\,M_x dp_x > 0$, since the domestic price of services will fall as imports rise. That is, Home will experience gains from trade in the liberalizing sector. However, changes in the local X market will in general affect both the domestic demand and supply for Y. If X and Y are complementary in production, then a contraction of the local X sector could also lead to a contraction of Y, pushing up p_y. If Y is imported, then this will harm Home by pushing up the price that foreigners are paid for local sales of their services. Alternatively, if liberalizing X increases local demand for Y, p_y could rise; again, this will harm Home via a terms-of-trade effect in Y. That is, Home could suffer a terms-of-trade loss, if trade liberalization is piecemeal. The net effect on trade liberalization depends on the size of the direct gains from the trade effect relative to the spillover effect. Piecemeal trade liberalization in the services sector may not guarantee a welfare improvement, even if all services are protected only with quota restrictions. This is because spillover effects into other protected markets may occur, if foreigners collect the quota rents.

A2. Regulatory issues

Positive externalities generated by local production of X services

Suppose now that locally produced X services generate positive externalities, as discussed in the text of the paper. Examples could include cultural activities, education, etc. Then local output of X enters the expenditure function, so that it is represented as $E(p_z,p_x,p_y,X^H,u)$, where X^H is Home production of X, and where E is decreasing in X^H to reflect the positive externality. To avoid spillover effects into the Y sector, let us suppose that the country is small and there is free trade in Y services, and also suppose that X is protected only with a quota so that $\alpha_x = 0$. Then the budget constraint is

$$E(p_z,p_x,p_y,X^H,u) = G(p_z,p_x + \theta,p_y,v) + \lambda_x M_x[p_x - p_x^*] - \theta X^H,$$

where I have allowed for a subsidy θ for domestic X production.

The welfare effects of allowing increased service trade in X are given by:

$$E_u\, du = \lambda_x[p_x - p_x^*]dM_x - (1-\lambda_x)M_x dp_x - (\theta + E_X)dX^H$$

If the externality is fully internalized, then $\theta = - E_X$ and the last term disappears; that is, the subsidy is equal to the marginal external benefit from local X production. With full internalization, liberalization of trade in services yields the same types of benefits as when there was no externality. For our small country with no distortions in other sectors, liberalization must raise welfare (if there were distortions in other sectors, the same issues discussed above would arise; the point here is that, with fully internalized externalities, there is nothing really new to worry about).

However, if there is no subsidy in place, then if services trade liberalization lowers domestic production of X, we have $dX^H < 0$, and the losses due to reduced Home production must be weighed against standard gains from trade. On the other hand, if domestic provision is excessively subsidized, free trade will lead to a benefit by undermining the government's subsidy program and reducing the (excessive) scale of domestic production.

Trade liberalization under the national treatment rule

In the discussion of externalities above, I showed that, as long as externalities are fully internalized, they create no problems for trade liberalization. Trade protection is an inefficient instrument to deal with externalities, as long as governments implement policies that fully internalize externalities.

However, when there are externalities, care must be taken in defining the terms under which trade liberalization occurs. Granting national treatment status to foreign service providers would be a mistake in such circumstances, if national treatment required that any subsidies made available to local service providers were also made available to foreign providers who sold services in the Home country (in any of the modes of delivery).

To simplify, maintain the assumptions above and let us suppose that quota rents accrue to foreigners. Then, if the subsidy θ applies both to local and foreign providers who sell locally, the effects of trade liberalization are given by:

$$E_u\, du = -M_x dp_x - (\theta + E_X)dX^H - \theta dM_x - M_x d\theta.$$

If the subsidy initially fully internalizes the externality, then a small amount of imports will reduce welfare. That is, starting from $M_x = 0$, and $\theta = -E_{X,}$ we have

$$E_u\, du = -\theta dM_x < 0.$$

This is because part of the subsidy payment accrues to foreigners but does not yield any external benefits. For positive levels of imports, this effect has to be balanced against the direct gains from trade. To mitigate the subsidy leakage, the government may reduce the subsidy ($d\theta < 0$), but then full internalization will no longer be achieved and again a welfare improvement cannot be assured.

For an even more striking result, consider the effect of allowing free trade in services, but under a national treatment rule that applies to subsidies. Because there is free trade, there are no quota rents to worry about. Also, because the subsidy must be available to both local and foreign service providers, it is equivalent to a domestic consumption subsidy. Since the Home country is small in our example, the free trade price of services in the absence of any subsidy is just the foreign price, p_x^*. Now suppose we start out in free trade, and the Home government tries to internalize the effect of the externality under the national treatment rule. Consider the effect of the subsidy on consumption. The consumer price falls to $p_x^* - \theta$, and so domestic consumption goes up. Note that the positive externality arose from local consumption of the local service, not from consumption *per se*.

What about the effect of the subsidy on local output? Producers respond to the producer price, not the consumer price. Because of free trade, the producer price will remain fixed at p_x^*, and thus there will be no effect on the level of domestic output. That is, by liberalizing trade under a national treatment rule that applies to subsidies, the government loses its ability to internalize the externality. It is easy to show that, in such a scenario, trade can be welfare-reducing. This is illustrated in the figure below:

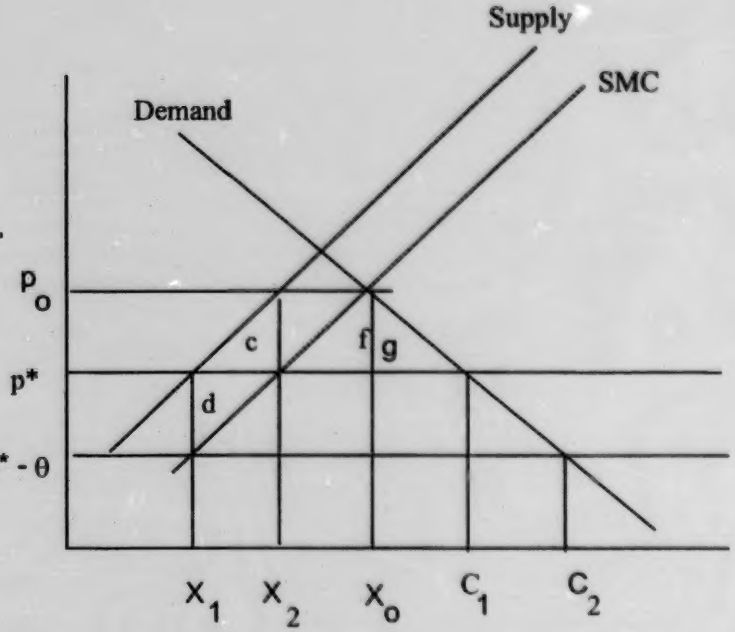

Figure 1: A Case of Welfare Reduction from Trade

I capture the external benefit from domestic consumption of the local service as the gap between the domestic supply curve and the "social marginal cost" curve (SMC). Initially, without trade, the government fully internalizes the externality by subsidizing domestic production. Price is p_o and output is X_o. Since the world price p* is below the domestic price, there are potential gains from trade. If the government allows free trade in services, but retains the right to offer a subsidy to domestic producers, but not foreigners, then the consumer price falls to p*, domestic output falls to X_2, and consumption rises to C_1. There are standard gains from trade given by the area f+g. As noted above, free trade is beneficial, provided that the government is able to offer a discriminatory subsidy to the domestic firm.

Suppose, however, that the government agrees to a national treatment rule that requires that foreign suppliers receive the same subsidy as the local producers. First note that, if there is no subsidy, Home output is at X_1, and consumption is C_1, with the balance being imported. Now suppose the government provides a subsidy θ per unit output to the domestic firm only. This shifts out the domestic supply curve to SMC, and increases output to X_2, as desired. However, if the subsidy must also be offered to foreign service providers, then the (perfectly elastic) foreign supply curve shifts down to $p^* - \theta$, which reduces Home output back to X_1. Consumption does rise to C_2, but the increased consumption induced by the subsidy is all provided by foreigners. Consequently, the attempt to internalize the externality is fully thwarted by the national treatment rule.

Since there is no point in introducing a subsidy in this situation, the gains from trade under the national treatment rule are f+g - (c+d), which will be negative, if the externality is sufficiently important.

It is important to emphasize that this analysis is not an argument against trade liberalization. As noted above, the first-best policy for this country is free trade combined with internalization of the externality. Rather, the point of this analysis is that careful consideration must be given to the rules under which a liberal trading regime operates. For some types of industries, there are no externalities, and a national treatment rule may be a useful part of the framework of a trade agreement. However, for other types of industries, this type of rule is inappropriate, because it eliminates the flexibility of the government to deal efficiently with internal domestic policy concerns.

Regulation with negative externalities

I now provide only a very stylized illustrative example to illustrate some of the issues that emerge when there are *negative* externalities. The purpose of this exercise is to illustrate the interaction between services trade liberalization, when there is a motive for regulation and regulation is endogenous.

Suppose Home has N consumers, and each consumes a fixed amount $\underline{C}$ units of a service and spends whatever income is left over on a numeraire consumption good. The numeraire good is produced only from labour, and there are L units of labour in total. The service is produced from labour and a specific factor K_S.

Suppose that provision of the service can cause some harm to consumers, and, for simplicity, treat the harm as a negative externality.[33] I do not model the harm-generating process explicitly, but rather assume that harm per unit service consumed can be reduced by regulation, which one might think of as inspection and monitoring services.

For a domestically produced service, let H(R) be the per capita harm per unit service, where H is decreasing in R, and $H'(R) > 0$, so that increased regulation reduces harm at a decreasing rate. For a service from a foreign service provider from country z, the harm will depend on the foreign regulatory regime $R^*(z)$, additional domestic regulatory services applied to the foreign provider $R^M(z)$, and possibly increased enforcement costs when dealing with a provider from a foreign country. So denote the harm per unit service from a foreign provider as $H^*[R^*(z),R^M(z),z]$.

All domestic agents are identical, and the utility of a typical consumer is given by

$$U = V(p,I) - H(R)C - H^*[R^*(z),R^M(z),z]M,$$

where M denotes "imports" of foreign services, which may come from any of the four different modes of supply and $C + M = \underline{C}$. I assume that the service provider must pay for the regulatory services.

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[33] In many cases, the most appropriate modelling approach would be to explicitly model information and reputation problems, but this approach is left for future work. However, in many cases, externalities are relevant. Transportation services can cause accidents; medical errors may be costly to the general public when there is public insurance, and also may have public health repercussions; education services generate externalities; faulty construction practices can have impacts on those who did not purchase the services directly, and recourse via the courts may be costly.

The profit function for the local sector is given by

$$\pi(p - wR, w, K_S),$$

and so, if we normalize N to 1, national income is

$$I = wL + \pi(p - wR, w, K_S) + \lambda(p - p^*)M$$

where λ is the fraction of the quota rents accruing to the domestic economy.

A benevolent domestic regulator chooses R to maximize U. Suppose that the regulator treats M and p^* as given. Then, maximizing U subject to I yields

$$-H_R C = wC + (1 - \lambda)\frac{dp}{dR} M$$

The marginal benefit of increased regulation (harm reduction) is set equal to the marginal cost (increased regulatory costs) plus increased import costs due to the regulation-induced increase in the domestic price of services.

To avoid rent-shifting motives for regulation, I suppose $\lambda = 1$, so that Home gets the quota rents. Then, treating p^*, R^* and R^M as given, the welfare effects of allowing increased market access to foreigners are given by:

$$\frac{dU}{dM} = V_I(p - p^*) - (H^* - H)$$

Increased market access for foreign service providers has two effects on welfare. First, there are standard gains from trade, if foreigners can provide the service at a lower cost than domestic residents. Second, however, is the average harm effect. There are two possibilities.

First if $H^* < H$, then the foreign service providers on average have less harmful side effects than domestic providers. Foreigners provide a service that is both low-cost and high-quality. In this case, Home unambiguously gains from allowing foreign access to the local market. As well as standard gains from trade, Home saves on regulatory costs.

Second, if $H^* > H$, then foreign service providers are less well-regulated than Home providers, and average harm rises with increased market access.

One of the implications of this analysis is that Home can gain by granting unconditional access to its market to all those foreign suppliers with $H^* \leq H$. Bilateral agreements for market access would be welfare-improving, since governments could determine which countries have standards at least as high as Home's. However, multilateral agreements become problematic, unless a means can be found to either exclude suppliers from countries z with $H^*(z) > H$, or to subject such firms to increased regulatory scrutiny.

Home can guarantee a welfare improvement from granting foreign access, if it chooses $R^M(z)$, so that

$$H = H^*[R^*(z), R^M(z), z].$$

Then, a competitive foreign firm from country z will pass the regulatory costs onto consumers, and so its price will be $p^* + wR^M(z)$. Foreign firms will enter the Home market only if $p^* + wR^M(z) < p$. The welfare effects of granting such a firm access to the local market is then:[34]

$$\frac{dU}{dM} = V_I[p - p^* - wR^M(z)] \varepsilon 0.$$

That is, if governments have full power to regulate foreign service suppliers, and the cost of this regulation is internalized in the price charged, then granting access to foreign suppliers will improve welfare. However, notice that the regulatory intensity will be different for service providers from different countries. Suppliers from countries with weak regulatory systems will be more intensely regulated locally. As well, Home may have more difficulty enforcing regulations for suppliers from some countries than others, and this also will then tend to push up regulatory costs for firms from such countries.

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[34] This may not, however, be the socially optimal choice of R^M—it is possible that different levels of harm from different suppliers may be efficient.

Because regulatory intensity must vary with the supplier's country of origin, implementing a national treatment regime may be problematic. If H* is easily observable, then national treatment would simply involve enforcing a common H. However, in most cases, H is not observable.

If H is hard to measure, countries may be forced to regulate the process by which services are produced. This may require that service providers be certified, and so on. National treatment in this case would then mean that domestic and foreign providers meet the same standards. Such a rule, however, if applied uniformly, could negate some of the gains from trade. Suppliers from low H* countries may not meet exactly the same standards as local producers, but may well provide a superior service. It would make sense then to exempt some suppliers from domestic certification standards, but to require it of others.

Further discussion of the implications of this issue appears in the text of the paper.

A3. Trade and investment liberalization in the services sector: Models with product variety

Introduction

In this section, I work through a simple product-differentiation model to illustrate how each of the four different models of supply can lead to gains from liberalization of restrictions on foreign service providers. The model is based on Krugman (1980), Markusen (1984) and Brainard (1993), and is somewhat influenced by Markusen and Venables (2000). It is closest in approach to Brainard, but is extended to allow for different modes of supply, as well as to focus on issues, such as the implications of more than one service sector, and the effect of services trade liberalization on emigration incentives. On the other hand, it is somewhat simpler than Brainard or Markusen and Venables, since the mode of supply is treated here as exogenous for simplicity.

Consumers have preferences defined over both goods and services. There is one consumption good, Z; and there are one or more service sectors. Consumers have a taste for variety within each service sector.

For simplicity, suppose there are two service sectors X and Y. Utility is:

$$U(Z,X,Y) = X^{\delta_x} Y^{\delta_y} Z^{\upsilon} \tag{1}$$

where $\delta_i \varepsilon 0$, $\nu > 0$, and $\delta_x + \delta_y + \nu = 1$, and where:

$$X = \left(\sum_{i=1}^{n_x} x_i^{\rho_x} \right)^{1/\rho_x} . \tag{2}$$

and:

$$Y = \left(\sum_{i=1}^{n_y} y_i^{\rho_y} \right)^{1/\rho_y} . \tag{2}$$

where $0 < \rho_x < 1$ and $0 < \rho_y < 1$.

There are two primary factors, labour (L), and capital specific to services (K_s). "Capital" can be interpreted broadly to include human capital.

I assume that good Z is produced only from labour, with a unit labour requirement of 1. Moreover, I assume that technology is identical across countries and that demand for Z is large enough, so that both countries always produce Z in any free trade or investment equilibrium. This is a major simplifying assumption that facilitates the exposition; the implications of relaxing it will be discussed later. Letting Z be the numeraire, this then fixes the wage at $w = 1$ in both countries. It does not, however, force full factor price equalization, as the returns to specific factors in services will vary across countries.

Services are produced from labour and service capital. To avoid duplication in the exposition, I will focus on the X service; the Y sector is set up analogously. There are both fixed and variable costs in service production. I assume that each variety in the X sector requires γ_X units of service capital as a set-up cost. If more than one plant is desired, there are extra fixed costs to be discussed later. Finally, each additional unit of service produced requires α_X units of labour. For a firm with only one plant, producing x_i units of service i, total costs are:

$$C^i(x_i) = r\gamma_X + w\alpha_X x^i. \tag{4}$$

Because of fixed costs and the structure of preferences, each firm will produce a unique variety. Because of the symmetry, all firms in the same country will charge the same price.

Let p_{Xi} be the price of service i in sector x. Then, because of the structure of preferences, consumers can do two-stage budgeting; so that we can think of consumers choosing X using the following price index Q_X for X:

$$Q_x = \left[\sum_{i=1}^{n_x} p_{xi}^{1-\sigma_x}\right]^{\frac{1}{1-\sigma_x}} \tag{5}$$

where $\sigma_X + 1/(1-\rho_X)$. The demand for variety i is:

$$x_i = \frac{\delta_x Q_x^{(\sigma_x - 1)}}{p_{xi}^{\sigma_x}} I \tag{6}$$

where I is income.

Because of symmetry, all firms will charge the same price and produce the same quantity of output, so I will drop the subscript i. Firms are assumed to treat I and Q_X as given, and thus the elasticity of their demand curve is σ_X. Profits of a typical firm with only one plant are:

$$\pi_X = (p_X - w\alpha_X)x - r\gamma_X. \qquad 1 \tag{7}$$

Profit maximization leads to the pricing rule:

$$p_X = \frac{\sigma_X}{\sigma_X - 1} w\alpha_X. \tag{8}$$

Free entry implies that profits are zero, which yields an expression for output:

$$x = \frac{F_X(\sigma_X - 1)}{w\alpha_X}, \tag{9}$$

where $F_X = \gamma_X r$.

Since all firms charge the same price, (5) reduces to:

$$Q_x = n_x^{\frac{1}{1-\sigma}} p_x \tag{11}$$

so that the price index is decreasing in the number of varieties, and (6) reduces to:

$$x = \frac{\delta_x I}{p_x n_x} \tag{12}$$

No trade or foreign investment in the services sector

If there is no trade or investment in services, then market clearing requires that demand and supply for each variety be equated; hence from (6) and (9) we have:

$$\frac{\delta_x I}{p_x n_x} = \frac{F_x(\sigma_x - 1)}{w\alpha_x} \tag{13}$$

Using (8), this can be simplified to:

$$\frac{\delta_x I}{\sigma_x} = n_x \gamma_x r \tag{14}$$

Using the same approach, we obtain for sector y:

$$\frac{\delta_y I}{\sigma_y} = n_y \gamma_y r \tag{14a}$$

Summing (14) and (15) yields:

$$\left(\frac{\delta_x}{\sigma_x} + \frac{\delta_y}{\sigma_y}\right) I = n_x \gamma_x r + n_y \gamma_y r = rK_s \tag{15}$$

Note that we have used the full employment condition for capital here. Income is:

$$I = wL + r_S K_S \tag{16}$$

and so, using (14) and (15), we can solve for r_S:

$$r_s = \frac{\left[\frac{\delta_x}{\sigma_x} + \frac{\delta_y}{\sigma_y}\right] wL}{\left[1 - \left(\frac{\delta_x}{\sigma_x} + \frac{\delta_y}{\sigma_y}\right)\right] K} \tag{16}$$

Output per firm in sectors x and y is:

$$x = \frac{r_S \gamma_X(\sigma_X - 1)}{w\alpha_X}, \quad y = \frac{r_S \gamma_Y(\sigma_Y - 1)}{w\alpha_Y} \tag{17}$$

Also, the number of firms in sector j is:

$$n_j = \frac{\delta_j \, I}{\sigma_j \gamma_j r}, \qquad j = x, y \tag{18}$$

which can be simplified to:

$$n_j = \frac{K}{\gamma_j}\left[\frac{\frac{\delta_j}{\sigma_j}}{\frac{\delta_x}{\sigma_x} + \frac{\delta_y}{\sigma_y}}\right], \qquad j = x, y \tag{18a}$$

Increasing country size with K/L constant leads to a larger variety of both types of services. This, in turn, reduces the price indexes Q_X and Q_Y, and increases welfare. The nominal return to capital is unaffected by country size.

As one would expect, countries relatively scarce in service capital have higher returns to capital, r. This results in a relative scarcity of services, a higher price index Q, and a higher output per firm.

Let us now suppose that there is free trade in the X service, but not the Y service. With no trade impediments in X, all consumers in both countries will consume all varieties of X. Because wages are equal across countries, the price of a variety in either country will still be determined by (8). The price index Q_x, therefore, becomes:

$$Q_x = \left(n_x + n_x^*\right)^{\frac{1}{1-\sigma}} p_x \tag{19}$$

Although p_x is unchanged by trade, the price index for X services, Q_x, falls, as long as consumers have access to a wider variety of services than prior to services trade liberalization.

The demand for a given variety now reflects both domestic and foreign income, as well as the new price index. Hence (12) becomes:

$$x = \frac{\delta_x \left(I + I^*\right)}{p_x\left(n_x + n_x^*\right)} \tag{20}$$

Assume, at first, that X is produced in both countries. Then, free entry at Home requires (9), which in free trade becomes:

$$\frac{\delta_x \left(I + I^*\right)}{\sigma_x\left(n_x + n_x^*\right)} = r\gamma_x \tag{21}$$

Similarly, free entry in Foreign requires:

$$\frac{\delta_x \left(I + I^*\right)}{\sigma_x\left(n_x + n_x^*\right)} = r^*\gamma_x, \tag{22}$$

Comparing (12) and (13), we see that free trade ensures that the return to service capital is equated across countries ($r = r^*$).

Trade in services will change the equilibrium number of varieties of both X and Y produced in each country. Because there is no trade in Y, the number of varieties produced is determined by the free-entry condition (14) and its foreign analogue—demand in each case reflects only local demand conditions. Combining these conditions for the two countries, and noting that $r = r^*$, we obtain:

$$\frac{\delta_y (I + I^*)}{\sigma_y \left(n_y + n_y^*\right)} = r\gamma_y, \tag{23}$$

Combining (21) and (23), and using the definitions of income, we can solve for the returns to capital and the equilibrium number of X varieties:

$$r_s = \frac{\left[\dfrac{\delta_x}{\sigma_x} + \dfrac{\delta_y}{\sigma_y}\right] w(L + L^*)}{\left[1 - \left(\dfrac{\delta_x}{\sigma_x} + \dfrac{\delta_y}{\sigma_y}\right)\right](K + K^*)} \tag{24}$$

and:

$$n_x + n_x^* = \frac{(K + K^*)}{\gamma_x}\left[\frac{\dfrac{\delta_x}{\sigma_x}}{\dfrac{\delta_x}{\sigma_x} + \dfrac{\delta_y}{\sigma_y}}\right] \tag{25}$$

Using (18), the number of Y varieties is:

$$n_y = \frac{\delta_y}{\sigma_y \gamma_y}\left(\frac{w}{r}L + K\right), \qquad n_y^* = \frac{\delta_y}{\sigma_y \gamma_y}\left(\frac{w}{r}L^* + K^*\right) \tag{26}$$

The expression in (26) depends or r, which is endogenous, but a closed form can be obtained by employing (24). However, (26) will be useful to help us to make some inferences about the effects of trade.

First, suppose the two countries are completely identical. Then, the world and local capital/labour ratios are the same, and from (24) we see that trade has no effect on the return to service capital, nor does it affect outputs of x varieties. As well, from (26) since r does not change, there is no effect on the Y sector. In this case, the sole effect of trade liberalization in the X service sector is to expand the number of varieties of X services available to consumers: comparing (25) and (18), the number of varieties available to consumers is twice what it was prior to free trade. This lowers the price index Q_X, and this unambiguously leads to a Pareto improvement—all workers and capitalists gain from access to a wider variety of services.

A similar result is obtained, if Home and Foreign have the same relative factor endowments ($K/L = K^*/L^*$). Then, as long as the X sector survives in both countries, the only effect of trade is to allow consumers in each country access to a wider variety of choices. In this case, however, the smaller country gains more from trade in services than the larger country. Because a small country has a small market, choice there is initially more limited than in the large country. Trade, therefore, leads to a greater expansion of choice in the small country. Put another way, the price index Q_X falls by more in the small country than in the large country, because it was initially relatively higher in the small country.

Now, suppose that Home is relatively abundant in service capital. From (16), we see that the return to service capital was initially lower in the Home country than in the foreign country. Foreign's higher pre-liberalization return to service capital reflects its relative scarcity there.

Comparing (16) and (25), we see that the convergence of capital returns induced by trade increases the return to capital at Home and reduces it in Foreign. Trade both increases market opportunities for services capitalists, but also increases competition. If the two countries are identical, then these two effects fully offset each other. However, for the capital-scarce country, the increased competition effect dominates the market access effect, and their return falls. This need not mean that foreign capitalists are worse off, however, since we also need to consider the effect of the changes in the service price indexes.

From (25), we note that both countries enjoy access to a greater variety of X services, and thus the price index for X services falls in both countries.

However, from (26), we see that the effects on variety in the Y sector differ across countries. Since r falls in Foreign, n^* rises, and thus the price index for both X and Y services falls in the capital-scarce country. In the capital-abundant country (Home), however, the Y service sector is squeezed by liberalization in X. Trade liberalization in X increases market access for capitalists in the X sector, and this induces movement out of Y and into X. Consequently, the price index for Y services rises at Home and falls in Foreign as a result of liberalization in X.

Specialized trading equilibrium

Using (26) and (24), solving for n_y, and using the full employment condition for capital yields an expression for the equilibrium number of X varieties produced in a country after trade liberalization. For Home we have:

$$n_x = \frac{L}{\gamma_x}\left[\frac{K}{L}\left(1-\frac{\delta_y}{\sigma_y}\right)-\frac{\delta_y}{\sigma_y}\frac{K^w}{L^w}\left(\frac{1-\left(\frac{\delta_x}{\sigma_x}+\frac{\delta_y}{\sigma_y}\right)}{\frac{\delta_x}{\sigma_x}+\frac{\delta_y}{\sigma_y}}\right)\right], \tag{27}$$

Notice that n_x is decreasing in the K/L ratio. That is, controlling for size (holding L constant), countries relatively less endowed in capital produce fewer varieties of X. Trade in services allows such a country to expand its output of the other service Y, by importing more X.

Moreover, note that, if K/L is sufficiently small relative to the rest of the world, then Home's X industry shuts down, when service trade liberalization occurs. That is, for sufficiently low K/L relative to the rest of the world, (27) would imply that $n_x < 0$. This simply indicates that, in fact, $n_x = 0$. In this case, the price equalization result no longer applies, but we obtain qualitatively similar effects from trade. Although the local X industry collapses, the X industry in Foreign expands, and its output is available to Home consumers via trade. Home consumers, therefore, gain access to a greater variety of both X and Y services.

Piecemeal liberalization as a partial cure for the brain drain

The benefits of trade liberalization may in fact be larger than indicated here, if we take into account the possibility of migration. Suppose that capitalists are potentially mobile across countries. Suppose also that capitalists differ in their allegiance to their country of origin. Specifically, let us focus on the Home country, and suppose it is small relative to Foreign. For simplicity, ignore Foreign migration (although this wouldn't qualitatively change the result). Suppose Home capitalists are indexed by m = [1,K], and that their utility functions are slightly modified to be as follows:

$$U(Z,X,Y;m) = X^{\delta_x} Y^{\delta_y} Z^{\upsilon} \varphi(m) \tag{28}$$

We suppose that φ(m) = 1 for all capitalists, if they move to the foreign country. However, capitalists living at Home obtain the extra boost to their utility φ. That is, if m prefers to live at Home, all else being equal, then φ(m) > 1, but, if there is no preference for Home, then φ > 1. We order capitalists so that φ' > 0, and suppose that φ(0) ≤ 1 and that φ(K) >>1.

Let us now find the utility of a capitalist in the absence of trade. Using the utility function and the equilibrium conditions, we can solve for consumption to obtain the ratio of utility of a Home capitalist who moves to Foreign relative to the utility he or she would obtain by staying at Home. Let U^e denote the utility of an emigrant. Then:

$$\frac{U^e}{U} = \frac{(n_x^*)^{\delta_x/(\sigma_x-1)}(n_y^*)^{\delta_y/(\sigma_y-1)} r^*}{(n_x)^{\delta_x/(\sigma_x-1)}(n_y)^{\delta_y/(\sigma_y-1)} r\varphi(m)} \tag{29}$$

That is, the relative benefits of emigrating versus staying at Home depends on the income differential, the difference in the variety of services available in the two countries, and the Home preference.

Since larger countries have a greater variety of services available in the absence of trade, then one would expect that capitalists with a weak attachment to their homeland would be tempted to move. This is indeed the case. Using our solutions for the number of varieties produced in Home and Foreign prior to trade, we obtain:

$$\frac{U^e}{U}=\frac{1}{\varphi(m)}\left(\frac{L*/K*}{L/K}\right)\left(\frac{K*}{K}\right)^{[\delta_x/(\sigma_x-1)]+[\delta_y/(\sigma_y-1)]} \tag{30}$$

If there is no Home preference ($\varphi = 1$) and if the relative factor abundance is the same across countries, then utility is higher in the larger (Foreign) country and thus there is an incentive for low φ people to move. This incentive is moderated somewhat if capitalists are in relatively scarce supply at Home, since then their income is higher at Home, and this may partially compensate for the relatively low variety of services available.

Consider two countries with the same capital/labour ratio. Then, we obtain a simple downward sloping relation between U^e/U and m. Prior to trade, all capitalists $m < m_0$ would like to emigrate at the initial equilibrium.[35] Moreover, this emigration, if it occurred, would be harmful to the workers at Home. If a worker has one unit of labour, and with the wage equal to 1 from the goods market equilibrium, the utility of a typical Home worker is given by:

$$U^L = aK^{[\delta_x/(\sigma_x-1)]+[\delta_y/(\sigma_y-1)]} \tag{31}$$

where $a > 0$ is a constant. Any emigration of capitalists leads to an erosion of product variety in the services sector, raising the price index for services and lowering worker utility.

Finally, worker utility in the Foreign country is given by:

$$U*^L = aK*^{[\delta_x/(\sigma_x-1)]+[\delta_y/(\sigma_y-1)]} \tag{32}$$

Foreign workers gain, if their country is successful in attracting capitalists from Home, since this raises K*, thereby raising product variety. If workers are in the majority and if immigration policy were heavily influenced by majority voting, then one would expect that the Foreign country would be receptive to immigration of capitalists from other countries. Finally, note that increases in the supply of labour have no effect on worker utility in this model. If, however, there were any assimilation costs that were partially borne by the country receiving immigrants, then one might expect that there would not be similar majority support for immigration of workers.

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[35] Note however, that as movement occurs, the relative utilities will endogenously change. So if movement actually occurs, the equilibrium cut-off will be different than m_0.

Consequently, the no-service-trade equilibrium is likely to lead to a "brain drain" from the Home country. Some capitalists in the Home country have an incentive to move to the Foreign country, and, moreover, the Foreign country is likely to be receptive to their move. Those Home workers with weak attachments to their homeland would also want to move, but they would be less likely to be accepted by the Foreign country. This means that Home workers will tend to be hurt by the out-migration of capitalists.

Now consider the effect of trade liberalization in the X service sector. For clarity, suppose that the capital/labour ratio is initially the same between Home and Foreign. Then, in the equilibrium with free trade in X (but no trade in Y), the utility differential for capitalists is:

$$\frac{U^e}{U}=\frac{1}{\varphi(m)}\left(\frac{K^*}{K}\right)^{\delta_y/(\sigma_y-1)} \tag{33}$$

Trade in X will equalize the variety of X services available across both countries, and this will reduce the incentive for capitalists to emigrate. There is still a wider variety of Y services available in the Foreign country, and this will continue to provide an attractive beacon for the more restless capitalists. Trade liberalization in X shifts the utility differential relationship to the left, and reduces the range of capitalists who want to move.

Finally, consider the effects of full trade liberalization in both X and Y. Then we have:

$$\frac{U^e}{U}=\frac{1}{\varphi(m)} \tag{34}$$

With full trade liberalization, the only capitalists who want to move are those who would prefer to live in the Foreign country, even if their real income were the same as at Home. That is, full trade liberalization eliminates the incentive for economically induced migration. Moreover, in this case, workers don't really care if migration occurs anyway, since they have access to the full range of services via trade.

However, because of the special nature of many services, requiring personal contact between the seller and the buyer, there will always be some service sectors in which full trade liberalization is not technologically feasible. Consequently, if we think of partial liberalization as the most relevant scenario, then potential emigration will remain a problem, but piecemeal service trade liberalization can provide a useful partial remedy.

Other modes of delivery

Now suppose that it is not feasible to trade services because of technological constraints. That is, suppose that some direct contact between the client and service provider is required.

Because services are a differentiated product, consumers in each country would have a latent demand for the services produced in other countries. Service providers have three options available to them, if a direct contact is required with the client. The client can come to the service provider, the service provider can send personnel to service the client, or the service provider can set up a branch office and hire local personnel to service local clients. Some combination of all three is possible as well, but I will focus on each of the three separately to facilitate a comparison

Client comes to service provider

One possibility is that the customer travels to the producing country to obtain the service (e.g., a foreign vacation, medical services, education services and many business services can be purchased via a visit to the country that produces these services). We can model this by introducing a fixed cost of consuming a foreign product. This fixed cost may include travel costs, information costs and possibly costs of adapting the service to local needs (if, for example, regulations in the Home country fail to recognize the validity of the foreign service). It is possible that, once paying this cost, a consumer can consume a package of foreign services; however, for simplicity, I will assume that the fixed cost must be borne for each different variety of service consumed.

Consider a typical Home consumer. For simplicity, suppose there is only one service sector x, so that $\delta_y = 0$. Suppose a fixed consumption cost F_C is required for each Foreign variety consumed. Then, if there are n Home services, a consumer with income I^k who consumes n^f Foreign services enjoys a utility of:

$$U = \frac{\delta_x^{\delta_x}(1-\delta_x)^{1-\delta_x}}{p_x^{\delta_x}}\left[I^k - n^f F_c\right](n+n^f)^{\delta_x/(\sigma_x-1)} \tag{35}$$

We suppose all producers treat n^f as given, so that they employ the same mark-up rule as before given by (8).[36] Hence p_x is the same across countries because of our equal wage assumption. Choosing n^f to maximize utility yields (for an interior solution):

$$\frac{\delta_x}{(\sigma_x-1)(n+n^f)} = \frac{F_c}{I^k - n^f F_c} \tag{36}$$

The consumer weighs the marginal benefit of more variety against the marginal loss due to paying more fixed costs. The solution is illustrated in Figure 2 (for the case of an interior solution). Solving yields:

$$n^f = \frac{\delta_x I^k - nF_c(\sigma_x-1)}{(\delta_x+\sigma_x-1)F_c}. \tag{36}$$

Notice that, if the fixed cost is sufficiently high, there will be no consumption of Foreign varieties. More domestic choice (higher n) also deters Foreign consumption. Higher income, on the other hand, encourages Foreign consumption. This implies that, if income is not uniformly distributed, then higher income people will allocate a larger fraction of their budget to consuming foreign varieties. Richer people will be better off both because they have more purchasing power, but also because they can afford to buy into foreign service consumption networks.

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[36] We can think of the consumer first paying the fixed cost and then deciding which variety to consume once he or she is in the foreign county. Thus, no individual producer can increase market share by trying to induce more foreigners to pay the fixed cost.

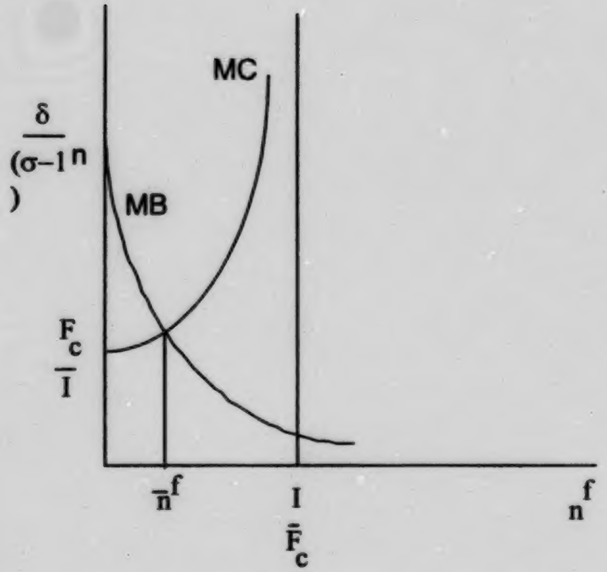

Figure 2. Optimal choice of foreign variety consumption in the presence of fixed consumption costs

For simplicity, let us consider two identical countries, and suppose that each country has L agents who each have 1 unit of labour and an equal share of the capital. Consequently, we will obtain a symmetric equilibrium. Free entry will imply:

$$\left(\frac{I-n^f LF_c}{n+n^f}\right)\left(1+\frac{n^f}{n}\right)=\frac{\sigma_x r\gamma_x}{\delta_x} \tag{37}$$

The domestic and foreign markets are symmetric, but a typical Home firm gets, on average, only a fraction n^f/n of the Foreign customers. Simplifying yields:

$$n^f=\frac{wL-rK(\sigma_x-\delta_x)/\delta_x}{LF_c} \tag{38}$$

If all consumers are identical, we can write (36) as:

$$n^f = \frac{\delta_x(wL + rK) / F_c - nL(\sigma_x - 1)}{L(\delta_x + \sigma_x - 1)} \tag{39}$$

Equations (38) and (39) give us two equations that determine r and n^f (for interior solutions). They are illustrated in Figure 3.

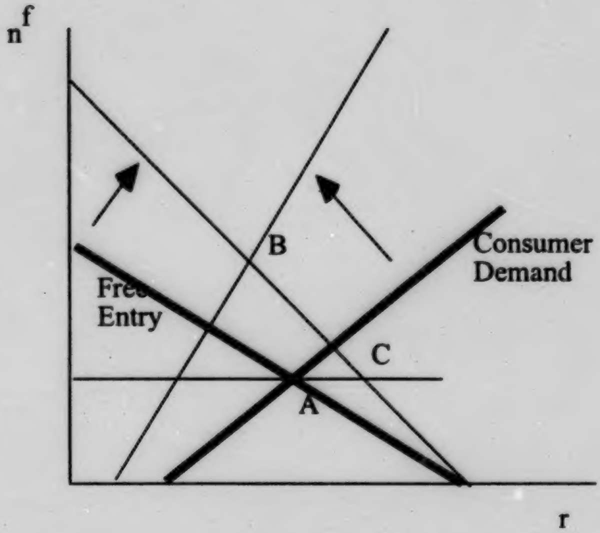

Figure 3. Effect of a decrease in fixed costs to consumers of accessing foreign markets

The free entry condition slopes downward, since an increase in n^f means that consumers are allocating more of their income to fixed costs, leaving less to spend on services, and therefore reducing profits (and hence lowering r). The consumer demand condition slopes up, since an increase in r corresponds to an increase in income per capita, which raises the number of varieties for which consumers are willing to travel to the foreign country. The initial equilibrium is at point A.

Let us now consider services trade liberalization that lowers the costs to consumers of accessing foreign markets. This could correspond to a reduction in travel costs (which in itself could be due to services trade liberalization, or to a commitment to recognize the foreign service as satisfying local requirements. We capture this with a fall in the fixed costs of accessing foreign services, F_c. If the initial equilibrium is at A, a fall in F_c shifts out the free-entry condition and shifts up the consumer-demand condition. The net effect is that the number of foreign varieties accessed by local consumers (n^f) rises. A reduction in protection does, however, reduce the return to capital in this symmetric case.

To find the net effect of a fall in F_c on a typical consumer, refer to (35). By the envelope theorem, the effect of a fall in F_c on consumer welfare depends on its effect on $I^k - n^f F_c$, holding n^f constant. Since all consumers are identical, this is equivalent to the effect on $I - Ln^f F_c$. However, from (37), we have:

$$I - n^f LF_c = \frac{K\sigma_x r}{\delta_x} \tag{40}$$

that is, in fact, the condition traced out by the free-entry condition (38) in Figure 3. Hence $I - Ln^f F_c$ is proportional to r for any n^f. However, as F_c falls, the free-entry condition rotates out leading to a new equilibrium at B, at which the return to capital is lower. However, at the original n^f, we obtain point C on the new free-entry curve, which is to the right of the original point A. Hence, we conclude that consumer welfare rises as F_c falls. Consumers gain from saving on access costs to foreign products, and, as a consequence of easier access, they gain from increased variety in their consumption portfolio.

This type of services trade liberalization is likely to enjoy widespread support in the host country, since it leads to an increase in employment as more local service providers sell to foreign customers; that is, there is a market-expansion effect. If we introduced an upward sloping supply of labour (for example, by introducing a fixed factor into goods production), then a country that unilaterally allowed increased access by foreigners would see an increase in the demand for its products and its labour, which would tend to lead to wage increases and therefore widespread support for such a policy.

Opposition might come from those service providers in the domestic market that lose some of their customer base—that is, while they might expect to attract new foreign customers, they may tend to focus on the local customers that they are losing. In cases of relatively small markets, there would be a relatively larger exodus of local customers because of the smaller product mix at Home—it is possible to obtain asymmetric equilibria where consumers from the small country visit the large country for services, but not vice versa.

Foreign service provider comes to client

In many cases, it is not possible for the client to come to the service provider. For many services, an on-site presence by the provider may be required. For example, a plumbing problem can be solved if the plumber comes to the site, but the site cannot be brought to the plumber. Many producer services also have this feature.

Let us suppose that a service provider in the Home country desires to service a client in the foreign country by providing an on-site service. Then, the firm must send one or more workers to the foreign country. We suppose that this type of transaction is costly (since the worker has to travel and may be subject to local regulations; it is also possible that there might be a requirement that a local provider be present to ensure domestic regulations are adhered to). To capture this simply, we suppose that the cost of sending a worker to a foreign country to provide a unit service is $\lambda\alpha w$, where $\lambda > 1$. We assume that the costs are symmetric across countries.

Again, I simplify by assuming $\delta_y = 0$ to focus on the case of just one service sector. I will also once again assume symmetry across countries. If a consumer consumes services from n local firms and n* foreign firms, then the price index is:

$$Q = \left(n + \lambda^{1-\sigma} n^*\right)^{\frac{1}{1-\sigma}} p_x \qquad (41)$$

where I have dropped the subscript "x" on most variables.

The free entry condition can be written:

$$\frac{I}{n+n^*\lambda^{1-\sigma}}+\frac{I^*\lambda^{1-\sigma}}{n^*+n\lambda^{1-\sigma}}=\frac{r\gamma\sigma}{\delta} \tag{42}$$

With symmetry across countries, this becomes:

$$I\left(1+\frac{1}{\lambda^{\sigma-1}}\right)=\frac{\sigma Kr\left(1+\lambda^{1-\sigma}\right)}{\delta} \tag{43}$$

With simplifying yields, this becomes:

$$r=\frac{\delta Lw}{K(\sigma-\delta)} \tag{44}$$

That is, the return to capital depends only on the capital/labour ratio and is not affected by trade: because of symmetry, the market-expansion effect is fully offset by the increased competition effect.

The welfare effects of allowing service providers to move between countries can then be inferred from (41). If λ is infinite, then, each country consumes only its own product varieties. If λ is zero, then the free-trade-in-services equilibrium is fully replicated. If λ is positive, then foreign services are relatively more expensive than local services, and this is reflected in the price index—consumers in each country consume relatively more local than foreign services. As λ falls, and foreign service providers can move across the border at lower cost, consumers in both countries gain from access to lower-cost foreign services.

I have focused here on the symmetric equilibrium. If one country is much larger than the other one, then consumers will be better off in the big country, because they have access to a wider variety of local services that do not require incurring the costs of moving personnel across borders. A reduction in λ will improve the welfare of workers in our model, since it leads to a lower price index. However, it will also lead to a relatively large influx of foreign workers into the Home market. In the extreme case, where λ is one, and the two-service sector model of the previous section is considered, then it is possible for the Home country to specialize in producing the non-tradable service Y, and to rely on foreign workers to provide X services. If the labour supply curve at home is upward sloping, this could put downward pressure on the home wage and generate opposition to liberalization.

Multinational firms

Finally, suppose that neither the customer nor the service provider can move across borders, and that direct services trade is not feasible. Then, the service provider can consider investing in the foreign country.

Suppose that, once a firm has invested in setting up its service variety, it can set up a branch office in a foreign country. A branch office requires a fixed investment, which, for simplicity, we assume requires $b^h\gamma_x$ units of service capital from the source country and $b^f\gamma_x$ units of service capital from the host country. We assume that $b^h + b^f < 1$, so that it is cheaper to set up a branch office than to start a new firm. The idea here is that some supervisory personnel from the source country may be needed to manage the branch office. These might be thought of as temporary movements of skilled workers. As well, it may be necessary to employ local supervisory personnel, since they have knowledge of the local market and local regulations. We assume that marginal costs of service production can all be satisfied with local labour. Consider the free-entry condition for home firms.

Profits of a Home firm with a branch plant are:

$$\pi^{MNE} = px^d + px^f - w\alpha_x x^d - w\alpha_x x^f - r(1+b^h)\gamma_x - r^*b^f\gamma_x$$

where x^d is sales in the home market and x^f is sales in the foreign market.

A multinational will use the same pricing strategy as an exporter, and, thus, using (8), the free-entry condition requires that:

$$\left(\frac{w\alpha_x}{\sigma_x - 1}\right)\left(x^d + x^f\right) = r\left(1 + b^h\right)\gamma_x + r^* b^f \gamma_x \qquad (45)$$

Suppose that all firms have branch plants, and assume symmetry across countries again.[37] Then, the free-entry condition can be written as:

$$\frac{I}{n+n^*}+\frac{I^*}{n^*+n}=\frac{r\left(1+b^h+b^f\right)\gamma_x\sigma}{\delta} \tag{46}$$

Using symmetry again and simplifying yields:

$$r=\frac{\delta Lw}{K(\sigma-\delta)} \tag{47}$$

That is, the return to capital is the same as it was in the trading/ no trade equilibrium. This result is, of course, sensitive to the symmetry assumption.

The equilibrium number of firms is, however, different than in the free-trade equilibrium:

$$n=n^*=\frac{K}{\left(1+b^h+b^f\right)\gamma_x} \tag{48}$$

The increased fixed costs of setting up foreign offices absorbs some of the service capital. This means that the equilibrium number of varieties is less than in a free-trade-in-services equilibrium. However, allowing foreign investment increases the range of varieties available to local consumers in either country relative to the case where there is no other way to access foreign service providers.

Referring to the utility function again, all consumers gain from allowing foreign investment, since it increases product variety. Easing regulations affecting foreign investment, which might be captured here as a reduction in b^h, leads to welfare improvements by further increasing product variety.

In contrast to movement of personnel, this option may generate less local opposition, since it may be viewed as increasing the demand for local labour; and, in a model with an upward sloping labour supply curve, reducing restrictions on foreign investment may lead to an increase in wages.

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[37] When countries are not symmetric, not all firms will have branch plants.

Although I have focused on the symmetric case here with one service sector, it is worth considering the implications of two services sectors, one without any mode of foreign supply, and also two countries of different size. Let Home be smaller. Then, in equilibrium, the smaller country's market will not be large enough to facilitate investment by all foreign suppliers, and thus product variety at Home will be lower than in Foreign. That is, in equilibrium, some firms will be multinational, and others will not be. However, Home will gain from access to greater product variety due to Foreign investment. Moreover, if we consider the migration model from earlier in the paper, then it should be noted that there will be, as before, an incentive for service personnel in the Home country to migrate to Foreign to take advantage of the larger market. If trade in services is not technically feasible, then it is worth noting that negotiating an agreement to allow mutual temporary movement of service capitalists across borders will be needed to facilitate foreign investment. Such an agreement will increase local product variety and therefore can raise the real income of service capitalists. That is, somewhat paradoxically, a country may be able to prevent an exodus of service capitalists by negotiating an agreement with trading partners to allow temporary movement. Workers gain from this agreement as well, since, by reducing the "brain drain," product variety in non-traded service sectors is maintained or enhanced.

Producer services

Although the model has been set up to treat services as being provided directly to consumers, it is fairly straightforward to adapt it to treat services as an intermediate activity provided to producers. A number of papers in the literature adopt this approach (as discussed in the main text), and here I will just give an indication of how this can generate additional sources of gains from liberalization.

Suppose there are two final consumption "goods" Z_1 and Z_2. Z_2 can be interpreted as either a good or a service. Suppose that Z_1 has the same properties as our old good Z—it uses only labour and is always produced in both countries. Z_2, on the other hand, uses labour, X services and possibly a specific factor K_2. It has constant returns to scale. For simplicity, suppose that the service aggregate used by producers has the same form as that used by consumers, as given by (2). Then the price index for services is Q_x, given by (11). The unit cost function for Z_2 is given by $C^2(w,Q_x,r_2)$, where r_2 is the return to the specific factor.

To see how trade or investment in services can affect goods production, first suppose that there is no specific factor K_2, so that labour and services are the only input. Also suppose initially that Z_2 is a non-traded good or service. Then, with perfect competition, the price of Z_2 is completely determined by labour and service costs. In the absence of trade in services, the equilibrium variety of services will be the same as before, but will be augmented by the derived demand for services from Z_2 producers. Now, consider the effects of liberalizing trade or investment in services. This will increase the variety of services available and therefore will lead to a fall in the price index Q_x. The cost and price of Z_2 will therefore fall, generating additional gains from trade. Consumers gain both from wider access to services, but also from cheaper Z_2 production.

Next, suppose that Z_2 is a traded good, and that the specific factor is required. Suppose Home is small, but that it has a larger endowment of the specific factor than Foreign. Then, prior to services trade liberalization, Home's small market will result in a high service price index for the Z_2 industry. Despite the relative abundance of the factor specific to Z_2, Home may be an importer of good 2, and, indeed, it is possible that, if services are sufficiently important in production, then Z_2 may not be produced at all. If the services sector is fully liberalized, so that Home has access to all foreign services, then the service price index will be equalized across countries. Then, because of its abundance of the specific factor K_2, Home will export good 2.

That is, services trade liberalization can generate "vent for surplus" gains from trade. Specific factors or resources in excess supply may not have a ready market, unless producers have access to a wider variety of services. Allowing any of the modes of supply of service trade can create a market for these factors and generate additional gains from trade.

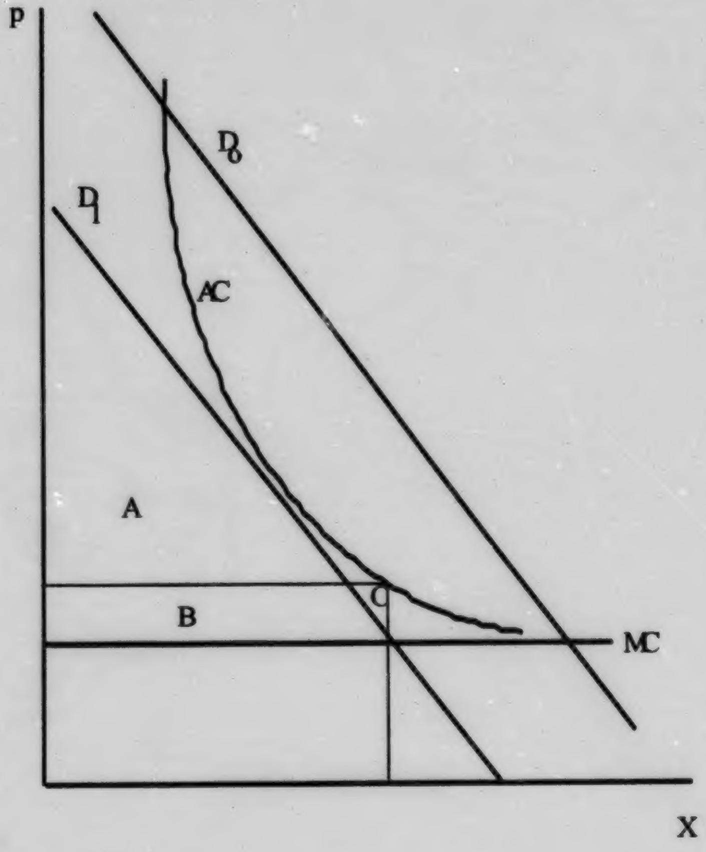
A4. Example of possible losses from trade-induced elimination of local services

In the main text, it was noted that, once we depart from the assumption of symmetry in product varieties, then it is possible that allowing access to foreign service providers can lead to the collapse of locally produced services, even when it is socially efficient for them to be provided. This differs from the earlier example of regulation in Appendix A2, since, in this case, there is no externality. The result here is driven by the presence of fixed costs. The example is due to Snape (1977) and can be illustrated with the following diagram.

Let X be the local service that is an imperfect substitute for a foreign-provided service. Average cost is AC, which declines because of a fixed cost. Marginal cost is MC. With no foreign access, demand for the local service is D_0, and the local service is viable, since demand is above average cost for a range of outputs.

When foreigners are given domestic market access, some consumers switch to the foreign service, causing the demand for local services to shift inwards to D_1. Since demand is now below average cost, the local service is not viable (assuming firms are unable to charge non-linear prices), and the industry shuts down. Despite the collapse of the local service industry, it would be socially efficient for it to continue to produce, as long as the consumer surplus is greater than the unrecovered fixed costs; that is, if $A > C$, as is the case in the example in the figure above.

Whether or not trade improves overall, welfare depends on the magnitude of direct gains from trade relative to the costs of the loss of the local variety. Once again, this is not an argument against trade liberalization in principle, as long as the government has the policy instruments available to efficiently correct the market failure. However, in practice, government intervention in such cases may be difficult, since a fair amount of information may be required to target the correct local services for support. Resistance to trade liberalization from those particularly affected by the loss of their local service is likely to ensue, and this resistance can be quite justifiable.



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Measuring the Barriers to Trade in Services: Literature and Methodologies

Zhiqi Chen and Lawrence Schembri*

Introduction

To facilitate ongoing negotiations to liberalize services trade in the context of the round of multilateral negotiations agreed at Doha, Qatar, in November 2001, it is important to have accurate measures of the various possible barriers to international trade in services. Accordingly, this chapter reviews and evaluates the literature on the measurement of barriers to trade in services in both conceptual terms (how to measure them) and empirical terms (how restrictive existing barriers have been found to be).

In approaching this issue, it is important to keep in mind several important characteristics of trade in services:

First, the General Agreement on Trade in Services (GATS), which provides the framework for the liberalization of international trade in services, classifies trade in services into 155 service types and four modes of supply:

1. Cross-border supply: A service is supplied from a supplier's country of residence to a consumer's country of residence.
2. Consumption abroad: A service is supplied through the movement of a consumer to a supplier's country of residence.
3. Commercial presence: A service is supplied through the movement of a commercial organization to a consumer's country of residence.

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4. Presence of natural person: A service is supplied through the movement of a natural person to a consumer's country of residence.

Barriers to trade in services can be put in place in each of the four modes of supply.

Second, except in the case of Mode 1 (an important example of which is cross-border e-commerce), trade in services does not usually involve consumers and service suppliers interacting across borders; rather, transactions typically occur within one country or the other. Given this, impediments to services trade normally take the form of regulations or other measures that effectively limit the access of foreign services suppliers to the domestic market, rather than border measures such as tariffs. As a result, the measurement of barriers to services trade faces the same types of challenges as those involved in measuring non-tariff barriers (NTBs) to merchandise trade.

Third, international mobility of production factors is often needed for services trade to take place. For example, Mode 3 of services trade, establishing commercial presence in a country, usually involves the movement of capital in the form of foreign direct investment (FDI). Restrictions on FDI are common in sectors such as telecommunications, and thus can have significant implications for services trade. Even more problematic is the movement of labour (Mode 4), since this raises the usually sensitive issues of immigration and/or the right of foreign nationals to work. Accordingly, restrictions in these areas are also highly relevant.

In addition, there are two general issues of classification to bear in mind. First, trade-restrictive measures can be categorized as either reducing the access of foreign service providers to the domestic market—the issue of market access; or as discriminating against foreign providers once they have entered the domestic market—the issue of national treatment. Second, barriers can be classified according to whether they impinge on the right of establishment (Mode 3) or the right to carry on trade in services in a foreign country from a home base (Modes 1, 2 and 4).

The remainder of this chapter is organized as follows. First, we discuss various methods that have been used to measure barriers to trade in services and the actual estimates obtained using these methods. We then review the models that have been used to quantify the economic impact of these barriers. Finally, we evaluate the strengths and weaknesses of these methods and models, and conclude by making some recommendations.

Quantifying Barriers to Trade in Services

Research into the measurement of services trade barriers is fairly recent. Generally speaking, measures of barriers to trade in services parallel those that were previously developed to measure NTBs to merchandise trade, and thus can be classified in terms familiar from the NTB literature, namely frequency measures, quantity-based measures and price-based measures.

Frequency Measures

The most widely used frequency measures are those developed by Hoekman (1995) using the GATS commitment schedules of member countries. Hoekman classifies these commitments into three categories, and assigns a numerical score to each category:

1. If no restrictions are applied for a given mode of supply in a given sector, a value of 1 is assigned.
2. If no policies are bound for a given mode of supply in a given sector, a value of 0 is assigned.
3. If restrictions are listed for a given mode of supply in a given sector, a value of 0.5 is assigned.

Hoekman calls these scores the *openness/binding factors*. Since, as noted above, there are 155 non-overlapping service sectors in the GATS classification list, and for each sector there are four possible modes of supply, a total of 620 such openness/binding factors exist for each member country.

Using these factors, Hoekman calculates three *sectoral coverage indicators* (hereafter the "Hoekman indices"). The first is calculated as the number of commitments made by a country in its GATS schedules divided by the 620 maximum possible.[1] The second, which Hoekman calls "average coverage," is equal to the sectors/modes listed as a share of maximum possible, weighted by the openness/binding factors.[2] The third is also a frequency ratio. It is the share of "no restriction" commitments in either (a) a member's total commitments, or (b) relative to the 155 possible sectors.

While the original purpose of these coverage indicators was to quantify GATS commitments,[3] Hoekman argues that they provide information on the relative restrictiveness of policy regimes pertaining to service industries because the coverage in each country's schedule is an indicator of its policy stance—the higher the coverage, the more open the regime.

There are two ways in which these coverage ratios can be used for this purpose. First, the restrictiveness of a country's policy in a sector can be measured by the ratio equalling (1- the Hoekman indices).[4] For example, if a country has made commitments in 10 percent of the 620 possible sector/modes, then using the first Hoekman index it would get a restrictiveness score of .9, meaning that 90 percent of its sector/modes are closed. Alternatively, "tariff equivalents" can be constructed using a country's coverage ratio, as Hoekman (1995) has done. He does so by first constructing a list of benchmark guesstimates of what tariff equivalents of the most protectionist nation might be. Then the "tariff equivalent" of a given country is obtained by multiplying this guesstimate by (1 minus the

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[1] This is similar to the frequency ratio developed for measuring NTBs to merchandise trade. The NTB frequency ratio is calculated as the number of product categories subject to NTBs divided by the total number of product categories.

[2] This is similar to the import coverage ratio developed for measuring the value of imports covered by NTBs. The NTB import coverage ratio is calculated as the value of imports in a product category subject to NTBs divided by total imports in the product category.

[3] See Hoekman (1995) p. 338.

[4] Indeed, this is how PECC (1995) measures the impediments to services trade in APEC member economies.

Hoekman indices).[5] Thus, if the most restrictive country worldwide had restrictions equivalent to a 50 percent tariff, then a country with a 0.9 restrictiveness index as in the preceding example, would have a tariff equivalent of 45 percent (i.e. 0.9 times 50).

A more elaborate set of frequency measures, called the *trade restrictiveness indices*, has been constructed by a team of researchers from Australia's Productivity Commission, the University of Adelaide, and the Australian National University for six service industries: telecommunications (Warren 2001a), banking (McGuire and Schuele 2001), maritime transport (McGuire et al 2001), education (Kemp 2001), distribution (Kalirajan 2000) and professional services (Nguyen-Hong 2000). In addition, Hardin and Holmes (1997) have developed frequency indices to measure the size of barriers to FDI across service industries.

To develop these indices, the actual restrictions on trade and investment in a service industry are compiled from a number of sources. These restrictions are then assigned scores and grouped into categories, each of which is assigned a numeric weight. These scores and weights are based on subjective assessments of the costs of restrictions to economic efficiency. Finally, the indices are computed using these scores and weights.

Typically, several indices are calculated for each industry to measure different aspects of barriers to trade. For example, several researchers have calculated two indices, one covering restrictions relevant for foreign service suppliers (the "foreign index") and the other covering restrictions applying to all suppliers (the "domestic index"). The domestic index is an indicator of restrictions on market access, while the difference between the foreign and domestic index is a measure of deviations from national treatment. To gain a better understanding of the Australian approach, we discuss each of their studies below in somewhat more detail.

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[5] Hoekman's estimates of tariff equivalents have been used by several studies that estimate the economic impact of service trade barriers. For example, see Brown et al. (1996) and Chadha (2000).

The data source used by Warren (2001a) is from a survey conducted by the International Telecommunication Union (ITU). The survey, entitled *Telecommunication Reform 1998*, contains information on actual government policies toward the telecommunications industry in 136 countries (Warren 2001a, p. 76). Using the information, Warren constructs five separate indices, three of which are designed to capture the restrictions on all potential entrants (market access), while the remaining two are designed to capture the restrictions on potential foreign entrants (national treatment). Within each of these two groups, Warren constructs separate indices for trade and investment.

For each index, Warren devises a weighting/scoring system based on his assessment of the relative importance of the restrictions on the state of competition. For example, for the index titled "MA/Invest (fixed)", which captures policies that discriminate against all potential entrants seeking to supply fixed network services via investment in Malaysia, Warren uses a weighting/scoring system based on answers to the following three questions:

(a) Does competition operate in the market? A score of 1 to 3 is given based on the number of competitors in the market. The score 3 is given for a market with three or more competitors.

(b) Does policy allow for competition in the market? A score of 1 is provided if full competition is allowed, with 0.5 for partial competition and 0 for a monopoly situation.

(c) Is the incumbent privatized? A score of 0 to 1 is given based on the fraction of the incumbent that is privatized.

Based on his assessment of their relative importance, Warren attaches weights 3, 2 and 1 respectively to the above three questions. The index is thus a weighted average of these scores. A higher index value indicates a more liberal regime.

McGuire and Schuele (2001) construct trade restrictiveness indices for banking services. They compile a list of non-prudential restrictions on banking services from a number of sources including the GATS schedules for financial services, WTO Trade Policy Reviews, and APEC Individual Action

Plans.[6] These restrictions are given scores and then grouped into 10 categories, each of which is assigned a weight. Their weighting/scoring system is reproduced in Tables 1a and 1b in the tabular section at the end of this chapter. As can be seen from these tables, restrictions considered to impose a greater cost on economic efficiency are given a greater weight. For example, restrictions covering the licensing of banks are assigned a larger weight than restrictions on joint-venture arrangements. These weights and scores are then used to calculate two indices: a foreign index that covers restrictions relevant for foreign banks and a domestic index that covers restrictions applying to all banks.

McGuire et al. (2001) construct trade restrictiveness indices for the maritime transport services. Their primary source of information is a questionnaire distributed by the WTO's Negotiating Group on Maritime Transport Services (NGMTS 1994). In addition, supplementary information has been taken from a number of sources, including the GATS schedules and WTO Trade Policy Reviews.[7] The restrictions are also given scores and grouped into 14 categories, which are assigned weights. Tables 2a and 2b present the weighting/scoring system used to construct the indices for maritime services. As in the McGuire and Schuele (2001) study on the banking sector, separate indices are calculated for domestic and foreign maritime service suppliers.

The trade restrictiveness index developed by Kemp (2001) for education services uses a method similar to that of Hoekman (1995). The index is based on GATS commitment schedules and adopts a three-value scoring system: a full commitment to liberalize trade is assigned a score of 0, a partial commitment is assigned a value of 0.5, and an unbound commitment receives a value of 1. Kemp's approach is similar to Hoekman's but differs in that he divides education into five subsectors (primary, secondary, higher, adult and other) and assigns a weight to each based on the relative importance of the subsector in trade. Specifically, higher education is the most traded sector and receives a larger weight of 0.4, while each of the remaining four subsectors is allocated a weight of 0.15. The index is then calculated by taking the weighted average of scores associated with the five subsectors in the four modes of supply and two categories of limitations (market access and national treatment). Kemp also conducts a sensitivity analysis by computing a second index using an alternative scoring system in which unbound sectors are treated as being unrestricted and given a score of 0 rather than 1. The reason for computing this second index is the belief that it is not always the case that unbound sectors are totally restricted.

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[6] For a complete list of sources, see McGuire and Schuele (2001), p. 203.

[7] For a complete list, see McGuire et al. (2001), p. 173.

Kalirajan (2000) develops trade restrictiveness indices for distribution services, including wholesale, retail and sales by commission agents and franchisers. The method used by Kalirajan is the same as McGuire and Schuele (2001) and McGuire et al (2001). Information on restrictions to trade in distribution services for 38 economies is drawn from a number of sources, including GATS schedules, WTO Trade Policy Reviews, OECD publications and the Tradeport database. These restrictions are classified into 12 categories, and weights/scores are assigned based on judgment of their economic impact. The weighting/scoring system used is reproduced in Tables 3a and 3b. Both domestic and foreign indices are calculated.

Nguyen-Hong (2000) develops trade restrictiveness indices for four types of professional services: legal, accountancy, architectural and engineering services. The method here is the same as that used by McGuire and Schuele (2001), McGuire et al. (2001) and Kalirajan (2000). Information on actual restrictions on professional services are compiled from the OECD Inventory of Measures Affecting Trade in Professional Services, the WTO Questionnaire on Restrictions in the Accountancy Services Sector, the APEC Directory on Professional Services, ILSAC's Legal Services Country Profiles, and a few other sources. These restrictions are classified into 17 categories. The weights assigned to these categories are shown in Table 4. Like most of the Australian studies, both domestic and foreign indices are calculated.

While most of the frequency measures reviewed above cover the barriers to FDI either directly or indirectly (through the inclusion of commercial presence), Hardin and Holmes (1997) is the only comprehensive study that focuses on measuring the size of barriers to FDI across sectors. The methodology is similar to those used by the rest of the Australian team. First, information on actual restrictions is compiled, drawing mainly on APEC members' Individual Action Plans and the *APEC Guide to Investment Regimes of Member Economies*. These restrictions are classified into five categories (see Table 5). Second, scores are assigned to these restrictions based on subjective assessments of their relative economic costs, ranging from 1 for a complete ban on FDI to 0 for a completely open regime. Details of the scores used are reproduced in Table 5. Third, for each individual GATS subsector, these scores are added to obtain an index; these are then further aggregated into indices for 11 broad sectors. Each sector index is obtained by taking the simple average of the subsector indices. Hardin and Holmes also conduct sensitivity analysis by recalculating the indices using two alternative scoring systems.[8]

From the above discussion, we can see that there are three important differences between the initial Hoekman (1995) approach, also used by the Pacific Economic Cooperation Council (PECC) (1995), and the later approach used by the Australian team. First, Hoekman and PECC use the GATS commitment schedules, while the later approach, with the exception of Kemp (2001), attempts to use actual estimates of the size of impediments to trade obtained from a number of sources. Second, Hoekman and PECC use a simple weighting/scoring system with only three values (0, 0.5 and 1), while the Australian team uses more elaborate weighting/scoring systems that attempt to reflect the relative economic impact of different impediments. The Australian approach, therefore, covers a broader spectrum of trade restrictions and involves a more carefully specified methodology than Hoekman and PECC. The simplicity of the Hoekman approach makes it relatively easy to calculate frequency indices for all 155 GATS sectors using one unified weighting/scoring system. The Australian approach requires more resources and, as a result, so far indices have been computed for only six industries, which are equivalent to approximately 30 percent of the 155 sectors covered by Hoekman (1995).

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[8] See Appendix A of Hardin and Holmes (2001) for details.

Finally, variations of the Hoekman approach and the Australian approach have been used by other researchers to construct frequency measures. Several of these studies are worth noting.

Marko (1998) computes two sets of indices to evaluate the WTO Agreement on Basic Telecommunications Services. The first set, computed for 69 member countries of the agreement, is based on the Hoekman approach discussed above. In addition, Marko calculates a second set for a selected group of 15 member countries using a more elaborate weighting/scoring system for different types of restrictions. He groups the list of restrictions on telecommunications services into eight categories based on four modes of supply and two categories of limitations (market access and national treatment). Details of the weights and scores applied to different restrictions are presented in Table 6.

Claessens and Glaessner (1998) calculate "degree of openness" indices for financial services in eight Asian economies. These take into consideration the barriers in the following six categories: the right of establishment and ownership, limits on establishing branch offices and ATMs, restrictions on lending/business activities, limits on universal banking, residency requirement, and restrictions on cross-border trade. In each of these categories, an economy is assigned a score between 1 and 5, with 1 being most closed and 5 most open. An example of how the scores are determined is given in Table 7. A unique feature of the Claessens and Glaessner approach is that they compute indices for both actual restrictions and GATS commitments. They compiled the list of actual restrictions from a number of sources and, to the extent possible, cross-checked these with country officials and other sources (Claessens and Glaessner 1998, p. 24).

Mattoo (1998) also develops a frequency measure to gauge the commitments made by member countries of the GATS Agreement on Financial Services. His approach is similar to that of Hoekman (1995) but has two important differences. First, Mattoo attaches different weights to different modes of supply. In particular, commercial presence is given a dominant weight, ranging from 0.75 to 0.85, because available statistics indicate that it is currently the most important mode of supplying financial services (Mattoo 1998, p. 40). Second, while using Hoekman's three-value scoring system for commitments on cross-border supply and consumption abroad, Mattoo devises a more elaborate scoring system for commitments on commercial presence. Details of the weighting/scoring system used by Mattoo are reproduced in Table 8. The liberalization index, as Mattoo calls it, is then the weighted average of these scores given to a country's commitments.

Colecchia (2001) proposes a methodology for calculating frequency measures for professional services. It is very similar to the methodology used by the Australian team. A notable difference is that Colecchia's restrictiveness index is not a simple weighted average of scores. Rather, it is the *deviation* of the weighted average from some benchmark. The benchmark, in turn, is defined to be a level of protection/openness considered to be the norm: "that is, the level that is normally applied by all countries given certain regulatory objectives (e.g. consumer protection, confidentiality and accountability)" (Colecchia 2001, p. 251). By focusing on the deviation from the norm, Colecchia argues, this benchmark approach makes the indices of different sectors more comparable and permits sectoral aggregation into an overall index of trade restrictiveness (Colecchia 2001, p. 247).

Quantity-based measures of trade restrictiveness are typically derived using econometric models based on the standard models of trade determination: the Heckscher-Ohlin model where trade is motivated by comparative advantage; the Helpman-Krugman model where trade is motivated by product differentiation, and the gravity model, where an important part of trade is determined by the relative size and proximity of trading partners (in terms of both distance but also other factors such as language, culture, etc.). The sizes of NTBs are measured either by the residuals from the estimated regression (i.e. the difference between the level of actual trade and the level predicted by the model), or by using various dummy variables (Deardorff and Stern 1998, p. 24).

Most such studies have been confined to the merchandise trade field. However, two studies have developed quantity-based measures of barriers to services trade: Hoekman and Francois (1999) and Warren (2001b). Francois and Hoekman fit a gravity model to bilateral trade in services between the United States and its major trading partners. The independent variables are per-capita income, gross domestic product, and a Western hemisphere dummy variable. The differences between actual and predicted imports (the residuals) are taken to be indicative of the size of barriers to trade. These are then normalized relative to the free trade benchmarks (which are assumed to be Hong Kong and Singapore). These quantity measures have also been converted into tariff equivalents by assuming a demand elasticity of -4.

Warren (2001b) develops a quantity-based measure for telecommunication services. He uses an econometric model to estimate the impact of impediments to trade and investment on the quantity of telecommunications services consumed. The study is done for both fixed and mobile services. The independent variables in this model are measures of per-capita income, quality of networks, waiting lists, household density, population density, and (of particular concern here) impediments to trade and investment. For the measures of impediments to trade and investment, Warren uses the frequency indices developed in Warren (2001a). The results from the regression model are then used to estimate the quantity impact of the barriers to trade and investment in the industry for 136 economies. These quantity estimates are also converted into tariff equivalents using a price elasticity of demand.

Note that there are two major differences between Warren's approach and the quantity-based approach used by Francois and Hoekman (1999). First, the quantity impact in Warren is measured in terms of quantity consumed rather than quantity traded. Ideally, these quantity measures should be based on quantity traded. However, for a variety of reasons, this has proved difficult for many types of services, primarily because of the lack of bilateral trade data (Warren 2001b, p. 85). Second, Warren does not use residuals or dummy variables to measure the size of impediments. Instead, he uses the trade restrictiveness index, which allows him to isolate the impact of these impediments from that of other factors (e.g. per-capita income and population density).

Price-based Measures

Price-based measures derive estimates of barriers to trade from differences in domestic and foreign prices ("price wedges"). If there are sufficient data on prices, then, following Deardorff and Stern (1998), such measures can be constructed directly by comparing the domestic price of the imported good (P) with a reference foreign price (P*).[9] In this approach, the percentage difference between the domestic and foreign price is comparable to a tariff (T), provided the price differences are not due to factors such as sunk costs and entry deterrence strategies by incumbent firms, rather than government-imposed barriers (see Ross (1999) for a detailed discussion on various types of barriers to entry). Price wedges can also be quantified using econometric methods or derived from quantity-based measures with the help of elasticities of demand and supply.

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[9] Depending on data availability, different types of prices are used for P and P* in the calculation of T. In the merchandise trade literature, these include actual prices (the preferred approach), c.i.f. invoice prices, the domestic price in a particular foreign exporting country, or the minimum domestic price among all foreign exporters adjusted for transport costs. Deardorff and Stern (1998, pp. 21-23) also discuss other price measures (e.g. quota transfer price) that can be used in the calculation of T.

To date, empirical price-comparison studies have been limited to NTBs in merchandise trade because of the lack of data on relevant prices in services trade. Francois and Hoekman (1999), however, propose a measure based on gross operating margin, defined as total sales revenue minus total average costs divided by total average costs.[10] The gross operating margins are calculated using the financial data reported by firms listed on stock exchanges. These margins provide an indication of the relative profitability of different industries, and hence, the relative magnitude (restrictiveness) of the barriers to entry that may exist. Hoekman (2000, p. 37) suggests two methods to gauge the sizes of trade barriers through the use of these margins. The first one is to use the difference between the average margins of a benchmark country with relatively free trade and the margins of the other countries in the sample. The second method employs the difference between manufacturing and service margins, with the margins in manufacturing serving as the benchmark.

Most price-based measures for services have been obtained by the Australian team using econometric methods. These studies are Trewin (2001) for telecommunications, Kalirajan et al. (2001) for banking, Kang (2001) for maritime transport, Kalirajan (2000) for food distribution, and Nguyen-Hong (2000) for engineering services. All five studies use the following procedure: one, a proxy of the domestic price is identified for the industry in question; two, a model is constructed to identify a list of variables that affect the price, one of which is the barriers to trade measured by the trade restrictiveness indices developed by the Australian team; three, a regression model is specified and estimated; and four, the estimated coefficients and trade restrictiveness index are used to calculate the sizes of price wedges for individual economies. This last step is done only in three of the five studies, but it could have been done without difficulty in all studies.

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[10] We include this measure in the category of price-based measures because operating margins are closely related to prices (or price-cost margins, to be more precise).

To measure trade impediments, Trewin (2001) uses the indices developed by Marko (1998) and Warren (2001a). While his stated aim is to "identify and decompose the observed wedge between telecommunications prices" (p. 100), in fact he estimates cost, not price wedges. Since higher costs normally translate into higher prices, however, the wedges estimated by Trewin capture at least part of the price impact of the impediments.[11]

Price wedges caused by restrictions on banking services have been estimated by Kalirajan et al. (2001). While banks engage in a wide variety of financial services ranging from lending to securities, this study is focused on their core business of intermediation between depositors and lenders. The price of such intermediation services is measured by a bank's interest margin, the difference between the interest rate the bank charges on loans that it makes and the rate that it pays its depositors. The objective of Kalirajan et al. is to estimate the impact of non-prudential restrictions on the interest margins of banks. To achieve this objective, they extend a model developed by Saunders and Schumacher (1997) to include measures of non-prudential restrictions. Specifically, Kalirajan et al. argue that a bank's interest margin is influenced by the following factors: prudential regulations such as capital and liquidity requirements, net non-interest expenses, market structure, interest rate volatility, and non-prudential restrictions. Because this model involves both bank-specific and economy-wide variables, a two-stage procedure is used for estimation. In the first stage, interest margins are regressed on prudential regulations and net non-interest expenses. From the estimation, they isolate the "pure interest spreads," that is, the interest margins that are common to all banks in an economy. In the second stage, the pure interest spreads are regressed on the remaining independent variables, namely market structure, interest rate volatility and non-prudential restrictions. The measure of non-prudential restrictions used in this study is the domestic and foreign restrictiveness indices developed by McGuire and Schuele (2001). Kalirajan et al. then use the estimated coefficients to construct the price wedges for individual countries.

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[11] Trewin employs the frontier cost model as the theoretical basis for his empirical relations. The independent variables are the log of total costs of providing various telecommunications services. In addition to measures of impediments to trade and investment, the independent variables include measures of output, real wages, interest rates, capacity, quality and technological change. The coefficients of these independent variables in the frontier cost functions are estimated using the maximum likelihood method. However, Trewin stops short of using the estimated coefficients to calculate the size of cost impact for each country.

Kang (2001) estimates the price impact of barriers to trade in maritime transport services by postulating that the price of shipping is a function of barriers to trade in maritime services, distance between trading partners, scale of bilateral trade, and stages of economic development of trading partners. The price of maritime services is measured by the shipping margin (shipping expenses). As measures of barriers to trade, Kang uses the indices developed by McGuire et al. (2001). Like Trewin (2001), Kang estimates his regression models but does not use his estimation results to calculate the size of price wedges for individual countries.

Kalirajan (2000) estimates the impact of the barriers to trade in food distribution services for 18 economies. The price wedge in this study is measured by price-cost margins. Based on the ideas contained in Betancourt and Gautschi (1993) and Mueller (1986), Kalirajan postulates that the price-cost margin of a food distribution firm is a function of firm-specific variables, such as the accessibility of its location, the assortment of goods available, the ability to deliver goods in the desired form and at the desired time, the level of information provided, and the ambience of the establishment (e.g., fixtures and fittings), as well as economy-wide variables such as industry concentration and barriers to entry. As in Kalirajan et al. (2001) for banking services, Kalirajan (2000) adopts a two-stage estimation procedure. In the first stage, the effects of firm-specific factors are estimated and then removed. The net effects common to all firms in an economy are then regressed on the trade restrictiveness index (developed in the first half of his study) and a dummy variable that measures restrictive practices by private sectors (e.g. exclusive contracts). The estimation results are then used to compute the impact on individual economies.

While Nguyen-Hong (2000) computes trade restrictiveness indices for four types of professional services, he estimates a price wedge only for engineering services. Like Kalirajan (2000), the price wedge is measured by price-cost margin. The econometric model is based on the Mueller (1986) framework in which a firm's profitability is assumed to be a function of its market share, market concentration, the extent of product differentiation and other factors. Nguyen-Hong extends this framework to include the effects of trade restrictions as measured by the trade restrictiveness indices developed in the first half of his study. The price impacts of the trade barriers are calculated for 20 economies using the estimated coefficients.

Empirical Estimates of Barriers to Trade in Services

Frequency Measures

The estimates of Hoekman's (1995) frequency measures are summarized in Table 9. This table shows that, overall, high-income countries made significantly more GATS commitments (47 percent of the GATS list) than did low- and middle-income countries (16 percent). Hoekman (1995) also reports results for individual countries; those for Canada are reproduced in column 4 of Table 9. Examining these data, it can be seen that, in terms of both the unweighted frequency ratio ("unweighted average count") and the weighted coverage ratio ("average coverage"), Canada made significantly more commitments than did the average high-income country. For example, the unweighted average count is 56.8 percent for Canada and 47.3 percent for the average of high-income countries.

PECC (1995) measures impediments to services trade by calculating the values of (1 minus the Hoekman indices). Two frequency measures are used. The first one is calculated using the Hoekman index derived as the number of sector/modes with no restrictions divided by the number of possible listings; the second one is calculated using Hoekman's average coverage ratio. The averages of these indices for 16 APEC countries are illustrated in Figure 1. This figure shows that, measured by the first frequency ratio, about 78 percent of all possible service markets are impeded in the APEC region. Even when partial commitments are taken into account, about 63 percent of service markets in this region are closed to international transactions. The index values for various services in Canada are presented in Figure 2. According to this index, environmental services, value added telecommunications, rental services and computer services are the most open in Canada, while sectors such postal services, basic telecommunications, audiovisual services and education are the most restricted.

The Australian team has calculated trade restrictiveness indices for six industries: telecommunications, banking, maritime transport, education, distribution, and professional services. Figures 3 to 6 illustrate some of the index values obtained by these studies. As one might expect, for each industry there is a high degree of variation in the index values for different countries. Among a selected group of economies in the Americas, Canada has the most open market to foreign trade and investment in banking and maritime transport services, but is the most restricted market in accountancy services (see the foreign indices in Figures 3 to 5). In terms of openness to trade in telecommunications services, Canada is in the middle of the top 20 trading countries (see Figure 6).

Marko (1998) also calculates frequency indices for telecommunications. Recall that Marko's indices are based on commitments made in the WTO Agreement on Basic Telecommunications Services, while the indices developed by the Australian team (Warren 2001a) are based on an ITU survey of actual restrictions. Figure 7 illustrates a comparison of these two types of indices. It indicates that there is some degree of correlation between the two types of indices. Indeed, Warren calculates that the Pearson correlation coefficient between the two is 0.64 (Warren 2001a, p. 83). On the other hand, from Figure 7 we can also see that there are a few significant mismatches between the two measures (e.g. estimates for Korea, Hong Kong, and Japan are quite different under the two methodologies).

The comparison done by Claessens and Glaessner (1998) for financial services shows the same pattern. As Table 10 illustrates, there appears to be a fairly close correlation between GATS measures and actual practices. At the same time, commitments can fall short of current practices as well as go beyond them. Hong Kong, for example, is committed to more liberal entry in insurance services than current practices. Many Asian economies, however, have made commitments that fall short of current practices, particularly in banking services, but also in other financial services. The Philippines, for example, has committed to allowing ownership in banking only up to 49 percent, while under current practice limits go up to 60 percent for existing banks and 100 percent for new banks (Claessens and Glaessner 1998, p. 25).

Mattoo (1998) reports his indices for GATS commitments on financial services for 73 countries. In Table 11, we reproduce his results for eight developed countries in his study. Keeping in mind that a higher index value means a commitment to more liberal trade, we note that Canada's commitment levels in all four areas of banking and insurance are below the averages of the developed countries.

In Colecchia (2001), indices for trade barriers in accountancy services are calculated for four countries: the United Kingdom, France, Australia and the United States. The restrictiveness index values for these four countries are 0.5, 0.7, 1.15, and 1.55.[12] These numbers suggest that among the four countries the United Kingdom is the most open, while the United States is the most restrictive to the provision of accountancy services.

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[12] These index values are deviations from the "benchmark," which is normalized to a value of 0.

Hardin and Holmes (1997) have calculated a restrictiveness index for foreign direct investment (FDI) in 15 APEC economies. The values of this index are presented in Table 12. These data indicate that communications and financial services tend to be subject to the most stringent FDI controls. The least-restricted sectors are business, distribution, environmental and recreational services. Across the economies, Korea, Indonesia, Thailand, China and the Philippines score relatively high, while the United States and Hong Kong tend to have the lowest index values. For Canada, the index value is 0.2 for seven out of a total of 11 sectors, reflecting horizontal restrictions across sectors. If we compare Canada and Australia, two high-income, small, open economies, we see that Canada has higher index values than Australia in all but one sector (financial services).

Price- and Quantity-based Measures[13]

Warren (2001b) reports his estimates of quantity impacts resulting from restrictions on investment in telecommunications services. The results for the world's 20 largest service-trading countries are reproduced in Table 13. Numbers in column 2 are quantity impacts of market access restrictions on fixed telecommunications services, while those in column 3 are quantity impacts of national treatment restrictions on the same services. The numbers in column 4 are quantity measures of market access restrictions on mobile services. As can be seen from Table 13, there are large variations in the quantity impacts across countries, ranging from 0 percent for United States and United Kingdom to 267 percent for China (arising from the restrictions related to national treatment in fixed services). Even within the developed countries, the quantity impacts can go as high as 7.5 percent (due to market access restrictions to mobile services in Spain). The quantity impacts for Canada are more moderate, ranging from 0.3 percent to 3.5 percent.[14]

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[13] Trewin (2001) and Kang (2001) do not calculate the sizes of price impacts for individual countries. Hence, these studies are not discussed in this section.

The price impacts of restrictions on banking services estimated by Kalirajan et al. (2001) are reproduced in Table 14. The numbers in column 2 measure the price impacts of restrictions on foreign banks. They range from 5 percent to 60 percent. The numbers in column 3 indicate the price impacts of restrictions that apply equally to domestic and foreign banks, and they range from 0 percent to 23 percent. Canada is among the countries with the smallest price impacts.

Kalirajan's (2000) study of food-distribution services reaches the surprising conclusion that a country's price-cost margin in this sector decreases with the height of barriers to trade. He interprets this result as an indication that barriers to trade in this sector raise the costs (as opposed to the prices) of distribution services. Hence, he estimates "cost impact indicators." The estimated cost impacts of restrictions on establishment by foreign firms are reproduced in Table 15.[15] They suggest that, for Canada, these restrictions have raised the costs of distribution by 3.09 percent, the sixth highest among the 18 economies studied.

Nguyen-Hong's (2000) estimates of price wedges caused by restrictions on foreign engineering service firms are reported in Table 16. They range from 1 percent to 15 percent, but they are below 10 percent for the majority of the 20 economies studied. The price wedge for Canada is a modest 5.3 percent, right in the middle of this group of economies.

Francois and Hoekman's (1999) estimates of tariff equivalents for business/financial services and construction are reproduced in Table 17. One interesting observation from Table 17 is that barriers to services trade are not always higher than those to merchandise trade. For instance, in the case of South and Southeast Asia, the Middle East and North Africa, the estimated tariff equivalents for business/financial services are lower than the average merchandise tariffs.

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[14] Warren (2001b) also estimates tariff equivalents associated with these quantity impact numbers. However, he cautions that, because the price elasticity of demand used to calculate the tariff equivalents is unsatisfactory, the focus should be on the quantity impact measures (Warren 2001b, p. 100).

[15] Kalirajan (2000) focuses on the restrictions on establishment because the estimated coefficient for this variable is significant at 5 percent, while the estimated coefficient for restrictions on ongoing operations is not.

The average gross operating margins calculated by Francois and Hoekman (1999) are reproduced in Table 18. The numbers in columns 2 and 3 suggest that while there are some specific service sectors whose margins are generally lower than those in manufacturing (e.g. retail and wholesale), margins in service sectors as a whole are significantly higher than those in manufacturing sectors. In Canada, for example, the average gross margin in all service sectors is 46 percent higher than that in manufacturing. Across countries, if the United States is taken as a competitive benchmark country, it can be observed that in many developing countries, margins are significantly higher. Hoekman (2000, p. 37) takes this as evidence that policies may be in place in developing countries that restrict competition and allow incumbent firms to garner rents.

Quantifying the Economic Impact of Barriers

In recent years, much effort has been directed at modelling the economic impact of barriers to services trade. Compared with the results of studies that aim only to the measure of size of barriers, the issue addressed in the preceding section, these studies can provide more profound insights as to the impact of barriers to services trade, including, for example, on the mechanisms through which the barriers raise prices and reduce quantity, the general equilibrium linkages among different sectors resulting from the trade barriers, and the welfare implications for consumers and for the economy as a whole.

The economic impact of barriers to trade in services is typically estimated by simulating calibrated theoretical models of international trade. The first step is to construct, on the basis of economic theory, a general or partial equilibrium model to capture the interaction among consumers, producers and governments. In the case of a general equilibrium model, the linkages among different sectors of an economy are also represented. The parameter values used in these models are usually chosen from existing estimates. In particular, the parameter values representing the size of barriers to trade are based on the estimates obtained using the methods reviewed in the preceding section. For example, Hoekman's (1995) estimates of tariff equivalents have been used in several studies. After the model is calibrated, it is used to simulate the effects of trade liberalization (e.g. a 20 percent reduction in all barriers to trade). The impact of the barriers to trade can be computed by comparing the actual situation with the simulated free trade equilibrium.

The only published partial equilibrium analysis that quantifies the impact of services trade liberalization is by Johnson et al. (2001); this study estimates the effects of increasing competition in international air services. In their theoretical model, consumers view services provided by different airlines as imperfect substitutes, and they care about the price and various non-price attributes of travel (e.g. the frequency of services). Airlines are modelled as oligopolists that choose prices and flight frequencies to maximize their profits. Johnson et al. use this model to simulate the effects of entry by a new airline, as well as the effects of liberalization of air services by establishing an open club among Australia, China, Hong Kong and Japan.

In particular, this study quantifies the effects on economic welfare, measured by the sum of consumer surplus and airline profits, associated with these changes. To do this, it considers three different scenarios based on the degrees of freedom granted to the airlines of member countries in the club. Under the first, the airlines of member countries are freed from restrictions on their operations and allowed to achieve the benchmark productivity of the most efficient carrier. In the second scenario, airlines of club members become free to fly wherever they like within the club, and to enter new markets previously denied them under the bilateral system. Under the third scenario, the two effects are considered together. In other words, airlines of member countries improve productivity, and are allowed to enter new markets and establish new networks. The simulation results for these three scenarios are reported in Table 19. From column 2, we see that the net effects of an open club on member countries are an increase in consumer surplus, a reduction in profit, and overall a gain in total surplus ranging from A$42.8 million to A$253.2 million. However, in the non-member countries, the gain in consumer surplus is outweighed by the loss in profit, resulting in a reduction in total surplus ranging from A$0.4 million to A$6.3 million.

With the above exception, studies in this area use computable general equilibrium (CGE) models. The two most commonly used types of CGE models are various versions of Global Trade Analysis Project (GTAP) model and the Michigan Model of World Production and Trade. Studies of the impact of services trade barriers based on the GTAP model are: Hertel et al. (1999); the Australian Department of Foreign Affairs and Trade (1999); Dee and Hanslow (2000a); and Verikios and Zhang (2000). Applications of the Michigan model are Brown et al. (1996); Chadha (2000); Chadha et al (2000); and Brown and Stern (2000). Since a detailed survey of these has already been done by the OECD (2000) and Brown and Stern (2000), here we present only a brief summary of those studies that model Canada as a separate economy.

(a) Brown et al. (1996) simulate the impact of a 25 percent multilateral reduction in Hoekman's (1995) tariff equivalents of service barriers. They consider four scenarios based on different assumptions on market structure and product differentiation. The estimated welfare gains for Canada range from US$2,330 million to US$3,979 million, or from 0.4 percent to 0.7 percent of GDP.

(b) Chadha et al. (2000) study the impact of a reduction in Hoekman's (1995) tariff equivalents of service barriers by 33 percent. The estimated welfare gain for Canada is US$20,226 million or 2.8 percent of GDP.

(c) In Benjamin and Diao (2000), liberalization of services trade is modelled as the removal of market segmentation and a reduction in fixed costs by 10 percent. The economic welfare of a country is measured by a welfare index. According to this study, liberalization of services trade will increase Canada's welfare by between 1.36 percent and 3.13 percent.

(d) Dee and Hanslow (2000a) study the impact of removal of barriers to trade in services. Their results suggest that Canada would *lose* from services trade liberalization by US$499 million.

(e) Verikios and Zhang (2000) simulate the impact of the elimination of barriers to trade in communications and financial services. Canada is estimated to gain US$39 million from trade liberalization in communications services, but to lose US$44 million from trade liberalization in financial services.

(f) Brown and Stern (2000) simulate the impact of removal of service barriers under three different scenarios for international capital markets. Their simulation results show that Canada's gain from removal of all barriers to services trade would be between US$73.3 billion and US$85 billion, or between 12.9 percent and 14.9 percent of GNP.

From the above summary, we can see that estimates of economic impact on Canada vary widely. At one extreme, Dee and Hanslow (2000a) show that Canada is expected to lose by US$499 million; in fact Canada is the only country expected to lose rather than gain from trade liberalization in both goods and services. At the other extreme, Brown and Stern (2000) show that Canada is expected to gain as much as US$85 billion; making Canada the largest gainer from services trade liberalization among all economies in their model.

Evaluation and Recommendations

The objective of this section is to evaluate the methodologies reviewed above and to recommend a framework to be used for the analysis of barriers to trade in services in Canada and in Canada's trading partners. The first thing we should note when evaluating these frameworks is that, because of the limitations imposed by our state of knowledge about how economies operate and by the severe lack of data, there is no perfect method to measure the barriers to trade in services. Each method has its strengths and weaknesses. As a result, trade-offs have to be made in deciding which method to use.

We should also recognize that the research in this area began only recently with Hoekman's (1995) pioneering work. As a result, the studies reviewed in this report should be viewed as preliminary attempts at measuring barriers to services trade. Both the methodology of measurement and the actual estimates of barriers can and will be improved as more research is done in this area.

When evaluating different methods of measuring barriers to trade in services, we consider the following factors:

(a) Information content. What type and amount of information is conveyed by a measure? Other things being equal, the more informative a measure is, the more desirable it is.

(b) Data and other resource requirements. As has been recognized by every researcher in this field, the lack of data is a serious constraint on our ability to measure barriers to services trade. A more elaborate model can usually produce more informative results, but at the same time it requires more data and other resources (e.g. human and computing resources).

(c) Accuracy and reliability. Is the information provided by a measure accurate and reliable? A related issue is the ease with which economists and non-economists (e.g. trade negotiators) can ascertain the accuracy and reliability of the estimates. A measure would have limited practical use in trade negotiations if it were produced using a complicated methodology that could not be easily understood by anyone other than a very small number of experts.

(d) Scope. Can the measures be applied to a wide range of service sectors and countries? The key here is the comparability of estimates for different service sectors and countries. A high degree of comparability across sectors, for example, will allow the measure to be applied to a large number of sectors.

(e) Intended use. In the end, this is the most important factor in determining the most appropriate framework to use. Broadly speaking, measures of barriers to trade can be used for two related purposes: assessment of the impact of trade liberalization and guidance for trade negotiations. In the latter regard, the following questions are relevant from a Canadian perspective:

  i) What are the major barriers to Canada's services exports?
  ii) What domestic policies create barriers to the importation of services and are detrimental to economic growth and welfare in Canada?

The latter information would be particularly helpful if it allowed Canadian negotiators to participate more effectively in the negotiations over the liberalization of trade in services.

Evaluation

When evaluating different frameworks, we use a top-down approach, starting with a comparative analysis of size measures versus impact measures. We then contrast the frequency measures with price-/quantity-based measures. Finally, we compare the two different approaches to constructing frequency indices.

Size Measures versus Impact Measures

It is clear that impact measures contain much richer information content than size measures. The former can reveal the magnitudes of impact on consumer welfare, firms' profits, as well as resource allocation, while the latter merely indicate the sizes of the barriers. The scope of impact measures is generally wider than that of size measures because the general equilibrium models that are used to derive them allow the consideration of many sectors and many economies simultaneously. The richer information content and wider scope, however, come at a significant cost in terms of the much larger amount of data and more resources that these models demand. Indeed, only a small number of researchers can produce such estimates because of the large initial costs of constructing general equilibrium trade models.

More importantly, impact measures are weaker than size measures in terms of their accuracy and reliability. There are several reasons for this.

First, because impact measures require substantially more data, the inadequacy of the existing data on barriers to services trade is more serious for impact measures than size measures. Often, researchers are forced to use less than satisfactory proxies for variables on which direct observations are not available.[16]

Second, the general equilibrium models used to obtain impact measures are calibrated using only one historic set of observations, leaving the estimated results potentially sensitive to the use of different sets of observations, especially if the structure of the economy has changed over time. Sophisticated general equilibrium models require an extensive assumed theoretical framework. Hence, the accuracy and reliability of the generated estimates are conditional on the validity of the theoretical framework. The econometric models used to derive size measures, on the other hand, rely less on theoretical structure and more on data, thus making the estimated results statistically more reliable.

Third, the complexity of general equilibrium models makes it difficult to gauge the accuracy and reliability of the estimates obtained. To people who are not familiar with the technical intricacies of CGE modelling (which would include most economists and practitioners), these models are a black box and it is difficult for them to judge objectively the reliability of the estimates. For example, as discussed above, the estimated impact of services trade liberalization for Canada ranges from a loss of US$499 million (Dee and Hanslow 2000a) to a gain of US$85 billion (Brown and Stern 2000), a range of over 10 percent of GDP! This variation in the estimates could be due to a variety of reasons, such as differences in the structures and assumptions of the models, differences in parameter values used, or differences in data sources. In practice, it is very difficult to reconcile widely different estimates. As a result, it is impossible to assess with a high degree of confidence the accuracy and reliability of these estimates.

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[16] For example, in their general equilibrium model, Dee and Hanslow (2000a) have to extrapolate the sizes of trade barriers for all service sectors from the size estimates of only two industries: banking and telecommunications services. However, there is no reason to believe that in all countries, the barriers to trade in these two industries are typical of all service industries. In fact, Hardin and Holmes (1997) find that these two sectors tend to be subject to the most stringent FDI controls (see Table 12).

Admittedly, various approaches to size measurement can also produce a wide range of estimates. The accuracy and reliability of size estimates, however, are normally easier to gauge and the differences less difficult to reconcile. For price- or quantity-based measures obtained using econometric models, well-developed statistical theory provides widely used test statistics that determine the goodness of fit with a high degree of accuracy (e.g. R^2 and t-statistics). A major advantage of frequency measures, meanwhile, is the transparency of the construction: it is relatively easy to understand how the index values are calculated. If two approaches yield different index values, it is relatively easy to pinpoint what has caused the difference (e.g. a difference in weighting/scoring system). This allows informed debates over the appropriateness of various aspects of the approaches (e.g. whether the score assigned to a particular type of trade barrier is too low or too high). Finally, since most CGE models use size measures such as Hoekman's (1995) tariff equivalents as inputs, the accuracy and reliability of impact measures so obtained cannot be any better than that of the size measures themselves.

The rich information content of impact measures makes them useful for the purpose of assessing the impact of trade liberalization. Estimates of the benefits from free trade in services can help mobilize political support for trade liberalization. On the other hand, to provide guidance to trade negotiations, a measure has to be reasonably accurate and reliable, and be easy to calculate and understand. As discussed above, in this regard, impact measures are weaker than size measures. Indeed, we agree with the OECD (2000, p. 13) assessment that the estimates from CGE models are "unlikely ever to be sufficiently accurate to be used directly in the actual conduct of GATS negotiations." Therefore, we believe that efforts should be focused on the development of size measures, since this is the approach that will likely have the greatest practical benefits.

Frequency versus Price-/Quantity-based Measures

As discussed above, price-/quantity-based measures provide richer information content than frequency measures, but have generally greater data and resource requirements and raise issues of comparability across sectors,[17] thus leading to a narrower scope of application. An important exception is Francois and Hoekman's (1999) approach based on operating margins; this price-based measure has relatively wide scope because it can be applied uniformly to a broad range of sectors and countries.

In the important area of accuracy and reliability, frequency measures are better than price-/quantity-based measures. To see this point, let us further divide the price-/quantity-based measures into two categories: those obtained with a direct approach and those derived indirectly.

With the direct approach, the measures are estimated directly using a proxy for trade barriers (namely frequency indices). The price/quantity estimates obtained by the Australian team are an example of this method.

With the indirect approach, the measures are inferred indirectly from the estimation residuals or the deviation of gross operating margins from some free trade benchmark, as in Francois and Hoekman (1999).

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[17] This is particularly true of the price-/quantity-based measures developed by the Australian team, which have narrower scope because they are determined on an industry-by-industry basis.

Because the direct approach employs frequency measures as explanatory variables in the empirical model, the accuracy and reliability of the resulting estimates cannot be any better than that of these frequency measures themselves.

The indirect approach, such as deriving estimates based on gross operating margins, is subject to even more serious deficiencies in accuracy and reliability. First, when size measures are inferred indirectly from residuals, they are very sensitive to the accuracy of the specification of the empirical model. A poor fit may lead one to conclude erroneously the existence of large barriers. Second, even when the model is correctly specified, it is still problematic to attribute all deviations from a competitive equilibrium to government-erected barriers. In principle, there are many barriers to entry that can cause price to deviate from its competitive level. Not all of these barriers are erected by governments.[18] While using a country or an industry as a free-trade benchmark, and focusing on the deviation from the benchmark may remove part of the influence of these non-government related barriers, some unknown portion of the influence may still remain.

The indirect approach has, therefore, an inherent bias toward exaggerating the size of government-erected barriers to trade. Of course, frequency measures can also over- or under-estimate the actual size of barriers when, for example, the weighting/scoring system is not specified properly. However, such a bias is not systematic; moreover, by carefully scrutinizing the weighting/scoring system used and all other aspects of the calculation process, one can at least get a sense of whether there is, in fact, a bias.

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[18] For example, consider a situation where technology know-how gained from years of learning-by-doing gives an incumbent firm an absolute cost advantage. Suppose that in one country, one lucky firm started early and was able to use the cost advantage to obtain a monopoly position. Meanwhile, in a second country, several firms started at about the same time and ended up sharing the market equally. If we were to use the indirect approach of Francois and Hoekman (1999) in this situation, we would be led to take the second country as the benchmark and inappropriately attribute cost differences between the two countries to government-erected barriers in the first country.

Considering the above factors from the perspective of providing guidance to trade negotiations, we believe that frequency measures contain enough information on the size of barriers to be used as a basis for negotiating the targets and monitoring the progress of trade liberalization. Furthermore, they are superior in terms of accuracy and reliability. For these reasons, frequency measures are preferable to price-/quantity-based measures for the purpose providing guidance to trade negotiations.

Different Types of Frequency Indices

Broadly speaking, there are two different approaches to calculating frequency indices: the Hoekman (1995) and the Australian approach. The differences between the two approaches have already been discussed. Here we re-examine these differences in terms of their information content, data and resource requirements, accuracy and reliability, and scope.

(a) Information content. We rank the Australian approach higher in information content because most of the indices developed using this approach are based on information drawn from a variety of sources over and above the GATS commitment schedules.

(b) Data and other resource requirements. The use of wider sources of information and more elaborate weighting/scoring systems means that the Australian approach requires more resources to implement.

(c) Accuracy and reliability. In this area, each of the two approaches has its strengths and weaknesses. Because the Australian approach uses actual restrictions to trade and investment (rather than simply a positive list of GATS commitments) and weighting/scoring systems that are based on judgment about the economic impact of different restrictions, the indices so derived tend to be more accurate reflections of the actual sizes of barriers than the Hoekman approach. On the other hand, the Australian approach requires more subjective judgment in the construction of indices. A more elaborate weighting/scoring system obviously requires more subjective judgment. What is not as obvious is that the selection of various types of government policies to be included in the list of barriers for the calculation of indices also involves subjective judgment. On the other hand, Hoekman's three-value weighting/scoring system leaves little room for subjective judgment. Hoekman's list of barriers is drawn from an international agreement, and again, there is no room for subjective selection. The Hoekman approach, therefore, is more objective.

(d) Scope. The Hoekman approach has a wider scope than the Australian approach because it uses the same information source and the same weighting/scoring system for all sectors. As a result, the Hoekman approach has a higher degree of comparability across sectors than does the Australian approach.

Taking all of the above factors into consideration, we believe that the Australian approach to frequency index is preferable to the Hoekman approach on an industry-by-industry basis. The Hoekman approach, however, would be preferable if measures are needed for a broad set of industries and countries for which comparable detailed data are not available. At the same time, we should be aware of the subjective elements inherent in the Australian approach and guard against strategic manipulations of weighting/scoring systems and the barrier list.

Having said that, we also recognize that on these issues there will be honest differences of opinions among different researchers and practitioners arising from their different perspectives. In all likelihood, there will be debates over how a restrictiveness index for a particular sector should be constructed. Therefore, it is important that Canada joins the efforts in the development of restrictiveness indices so that Canada's views are represented in these debates.

Conclusions and Recommendations

In the past five years, significant progress has been made in the measurement of both the size and economic impacts of barriers to services trade. Frequency measures, price-based measures, and quantity-based measures have been constructed to gauge the sizes of the barriers in many service sectors, while CGE models have been used to estimate the economic impacts of the barriers. At the same time, it should also be recognized that the measurement of barriers to services trade is a very new area and that more research is needed to refine both the methodology and the actual estimates.

Each of the approaches reviewed in this chapter has its strengths and weaknesses; which of these approaches is the best one to use depends to a large extent on the objectives of the user. In terms of Canada's interest and priorities in negotiations on liberalization of services trade, we believe that, on balance, the Australian approach and the Hoekman approach to frequency indices are the most promising.

Based on the above analysis, we make the following recommendations:

(a) Measurement of barriers to trade in services should focus on size rather than impact measures.

(b) Among various frameworks for size measures, the Australian approach to constructing frequency indices is the most preferable on an industry basis for a well-defined set of industries. The Hoekman approach may be preferable for a broader set of industries and countries.

(c) For those industries for which frequency measures have already been developed by the Australian team (namely, telecommunications, banking, maritime transport, education, distribution, and professional services), consideration should be given as to whether improvements can be made by, for example, including additional sources of information and/or using a different weighting/scoring system.

(d) For those industries for which frequency measures have not been developed by the Australian team, consideration should be given to Canada taking a lead in undertaking studies to construct indices for these sectors.[19]

(e) As a first step, efforts should be focused on developing or improving indices for service sectors that are of particular significance to Canada.

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[19] The information challenges are quite significant, however. To construct frequency measures, we need a comprehensive list of barriers to services trade on a sectoral basis, one for each country. Collecting such information is difficult. In theory, such a list can be compiled by conducting a comprehensive review of all government policies and practices that might restrict trade in services. Such a comprehensive review, however, would be very costly. Although this can be done for selected sectors in a few selected countries, it would not be feasible to do this for every sector in every country. A more feasible approach would be to draw from a variety of existing information sources, such as industry associations, government departments and international organizations. The GATS commitment schedules are a very useful starting point for the construction of such a list. However, the information in the GATS schedules is limited because it is a positive list and it is a list of commitments rather than actual restrictions. Additional lists of actual barriers have been compiled by various international organizations. They include the WTO Trade Policy Reviews, the World Bank's Trade in Services Database, the EU Market Access Sectoral and Trade Barriers Database, the National Trade Estimate Reports on Foreign Trade Barriers by the Office of the United States Trade Representatives (USTR), and the APEC Individual Action Plan.

Tables

Table 1a. Weights and Scores: Restriction on Commercial Presence in Banking Services

Weight	Score	Restriction Category
0.20		Licensing of banks
	1.00	Issues no new banking licences
	0.75	Issues up to three new banking licences with only prudential requirements
	0.50	Issues up to six new banking licences with only prudential requirements
	0.25	Issues up to 10 new banking licences with only prudential requirements
	0.00	Issues new banking licences with only prudential requirements
0.20		*Direct investment*
		The score is inversely proportional to the maximum equity participation permitted in an existing domestic bank. For example, equity participation to a maximum of 75 percent of a bank would receive a score of 0.25
0.10		*Joint-venture arrangement*
	1.00	Issues no new banking licences and no entry is allowed through a joint venture with a domestic bank
	0.50	Bank entry is only through a joint venture with a domestic bank
	0.00	No requirement for a bank to enter through a joint venture with a domestic bank
0.02		*Permanent movement of people*
	1.00	No entry of executives, senior managers and/or specialists
	0.80	Executives, specialists and/or senior managers can stay up to one year
	0.60	Executives, specialists and/or senior managers can stay up to two years
	0.40	Executives, specialists and/or senior managers can stay up to three years
	0.20	Executives, specialists and/or senior managers can stay up to four years
	0.00	Executives, specialists and/or senior managers can stay for a period of five years or more

Source: McGuire and Schuele (2001) pp. 204-205, Table 12.1.

Table 1b. Weights and Scores: Other Restrictions in Banking Services

Weight	Score	Restriction Category
0.15		*Raising funds by banks*
	1.00	Banks are not permitted to raise funds in domestic market
	0.75	Banks are not permitted to raise funds in domestic capital market
	0.50	Banks are restricted in accepting deposits from the public
	0.00	Banks can raise funds from any source with only prudential requirements
0.15		*Lending funds by banks*
	1.00	Banks are not permitted to lend to domestic clients
	0.75	Banks are restricted to a specified lending size or lending to government projects
	0.50	Banks are restricted in providing certain services such as credit cards, leasing and consumer finance
	0.25	Banks are directed to lend to housing and small business
	0.00	Banks can lend to any source with only prudential restrictions
0.10		*Other business of banks: insurance & securities services*
	1.00	Banks can only provide banking services
	0.50	Banks can provide banking services plus one other line of business: insurance or securities services
	0.00	No restrictions on conducting other lines of business
0.05		*Expanding the number of banking outlets*
	1.00	One outlet with no new outlets permitted
	0.75	Number of outlets is limited in number and location
	0.25	Expansion of outlets subject to non-prudential regulatory approval
	0.00	No restrictions on banks expanding operations
0.02		*Composition of the board of directors*
		The score is inversely proportionately to the percentage of the board that can comprise foreigners. For example, a score of 0.80 is allocated where 20 percent of the board of directors of a bank can comprise foreigners.
0.01		*Temporary movement of executives, senior managers and/or specialists*
	1.00	No temporary entry
	0.75	Temporary entry for up to 30 days
	0.50	Temporary entry for up to 60 days
	0.25	Temporary entry for up to 90 days
	0.00	Temporary entry for over 90 days

Source: McGuire and Schuele (2001) pp. 204-205, Table 12.1.

Table 2a. Weights and Scores: Restrictions on Commercial Presence in Maritime Transport Services

Weight	Score	Restriction Category
0.15		*Conditions on the right to fly the national flag*
	0.40	Commercial presence is required in the domestic economy
	0.30	50 percent or more of equity participation must be domestic
	0.20	50 percent or more of the crew are required to be domestic
	0.10	Ship must be registered
0.10		*Form of commercial presence*
	1.00	Measures which restrict or require a specific type of legal entity or joint venture arrangement
	0.50	Shipping service suppliers must be represented by an agent
	0.00	No restrictions on establishment
0.10		*Direct investment in shipping service suppliers*
		The score is inversely proportional to the maximum equity participation permitted in an existing shipping service supplier. For example, equity participation to a maximum of 75 percent of an existing shipping service supplier would receive a score of 0.25
0.10		*Direct investment in onshore maritime service suppliers*
		The score is inversely proportional to the maximum equity participation permitted in an existing onshore maritime service supplier. For example, equity participation to a maximum of 75 percent of an existing onshore service supplier would receive a score of 0.25
0.02		*Permanent movement of executives, senior managers and/or specialists*
	1.00	No entry
	0.80	Stay up to one year
	0.60	Stay up to two years
	0.40	Stay up to three years
	0.20	Stay up to four years
	0.00	Stay for five years or more

Source: McGuire et al (2001) pp. 176-178, Table 10.2.

Table 2b. Weights and Scores: Other Restrictions in Maritime Transport Services

Weight	Score	Restriction Category
0.10		*Cabotage*
	1.00	Foreigners generally cannot provide domestic maritime services
	0.75	Foreigners that fly the national flag can provide domestic maritime services
	0.50	Restrictions on type and length of time cargoes can be carried
	0.00	No cabotage restrictions
0.10		*Transportation of non-commercial cargoes*
	1.00	Private shipping service suppliers cannot carry non-commercial cargoes
	0.50	National flag shipping service suppliers can carry non-commercial cargoes
	0.00	No restrictions on access to non-commercial cargoes
0.10		*Port services*
	0.30	Some restrictions on access to ports
	0.20	Mandatory use of pilotage
	0.15	Mandatory use of towing
	0.10	Mandatory use of tug assistance
	0.05	Mandatory use of navigation aids
	0.05	Mandatory use of berthing services
	0.05	Mandatory use of waste disposal
	0.05	Mandatory use of anchorage
	0.05	Mandatory use of casting off
0.05		*Discretionary restrictions, including for retaliation*
	1.00	Governments are able to impose selective restrictions
	0.00	Governments are unable to impose selective restrictions
0.05		*United Nations Liner Code*
	1.00	Economy is party to the Code and applies Article 2
	0.75	Economy is party to the Code but doesn't apply Article 2
	0.00	Economy is not party to the Code
0.05		*Government permits conferences*
	1.00	Government permits the operation of conferences
	0.00	Conferences are subject to effective competition
0.05		*Bilateral maritime services agreements on cargo sharing*
		The score for an economy is taken from the 35 by 35 matrix of bilateral agreements on cargo sharing

Table 2b (Continued)

Weight	Score	Restriction Category
0.02		*Composition of the board of directors*
		The score is inversely proportionately to the percentage of the board that can comprise foreigners. For example, a score of 0.80 is allocated where 20 percent of the board of directors of a maritime service supplier can comprise foreigners
0.01		*Temporary movement of executives, senior managers and/or specialists*
	1.00	No temporary entry
	0.75	Temporary entry up to 30 days
	0.50	Temporary entry up to 60 days
	0.25	Temporary entry up to 90 days
	0.00	Temporary entry over 90 days

Source: McGuire et al (2001) pp. 176-178, Table 10.2.

Table 3a. Weights and Scores for Restrictions on Establishment in Distribution Services

Weight	Score	Restriction Category
0.20		*Restrictions on commercial land*
	1.00	Acquisition of commercial land is not permitted
	0.50	Acquisition of commercial land is permitted, but is restricted to a certain size
	0.00	No restrictions on the acquisition of land
0.20		*Direct investment in distribution firms*
		This score will be inversely proportional to the maximum foreign equity participation permitted in a domestic distribution firm. For example, equity participation to a maximum of 75 percent of an existing distribution firm receives a score of 0.25
0.05		*Restrictions on large-scale stores*
	1.00	National legislation prohibits large-scale stores
	0.50	Regional and local authorities restrict large-scale stores
	0.00	No restrictions on large-scale stores
0.075		*Factors affecting investment*
	0.30	Takeovers are hindered by regulation
	0.30	Investors must meet performance requirements
	0.20	Establishment subject to an economic needs test
	0.20	Government screening of investment
0.075		*Local government requirements*
	0.40	Establishment subject to a local environmental impact assessment or zoning requirements
	0.40	Local employment requirements
	0.20	Restrictions on operating hours
0.05		*Permanent movement of executives, senior managers or staff*
	1.00	No entry
	0.80	Allowed to stay a period of up to one year
	0.60	Allowed to stay a period of up to two years
	0.40	Allowed to stay a period of up to three years
	0.20	Allowed to stay a period of up to four years
	0.00	Allowed to stay for a period of more than four years

Source: Kalirajan (2000) Table 2.2.

Table 3b. Weights and Scores for Restrictions on Ongoing Operations in Distribution Services

Weight	Score	Restriction Category
0.075		*Wholesale import licensing*
	1.00	No new import licences are available for wholesalers
	0.50	A limited number of new import licences are available for wholesalers
	0.00	There are no limits on the issue of import licences
0.05		*Limits on the promotion of retail products*
	1.00	Distribution firms are prohibited from using advertising and promotion to market retail products
	0.50	Distribution firms are limited in their use of advertising and promotion to market retail products
	0.00	No restrictions on advertising/promotion of retail products
0.10		*Statutory government monopolies*
		The score for an economy is taken from a table of 16 product categories, in which distribution occurs through statutory government monopolies
0.05		*Protection of intellectual property rights*
	1.00	An economy is on the USTR priority 301 watch list
	0.50	An economy is on the USTR priority watch list
	0.00	Intellectual property rights are not on USTR watch list
0.05		*Licensing requirements on management*
	1.00	All directors or managers or at least a majority of them must be nationals or residents
	0.75	At least one director/manager must be a national or resident
	0.50	Directors and managers must be locally licensed
	0.25	Directors and mangers must be domiciled in the foreign economy
0.025		*Temporary movement of executives, senior managers or staff*
	1.00	No temporary entry
	0.75	Temporary entry up to 30 days
	0.50	Temporary entry up to 60 days
	0.25	Temporary entry up to 90 days
	0.00	Temporary entry over 90 days

Source: Kalirajan (2000) Table 2.2.

Table 4. Restriction Categories for Professional Services

Restriction categories	Relevant to foreign index	Weight	Relevant to domestic index	Weight
Barriers to establishment				
Form of establishment	Yes	0.08	Yes	0.08
Foreign partnership or joint venture	Yes	0.08	No	n.a.
Investment and ownership by foreign professionals	Yes	0.05	No	n.a.
Investment and ownership by non-professional investors	Yes	0.05	Yes	0.05
Nationality requirements	Yes	0.135	No	n.a.
Residency and local presence requirements	Yes	0.135	No	n.a.
Quotas/economic needs test	Yes	0.10	No	n.a.
Licensing and accreditation of foreign professionals	Yes	0.10	No	n.a.
Licensing and accreditation of local professionals	No	n.a.	Yes	0.05
Permanent movement of people	Yes	0.02	No	n.a.
Barriers to ongoing operations				
Activities reserved by law to the profession	Yes	0.05	Yes	0.05
Multidisciplinary practices	Yes	0.05	Yes	0.05
Advertising, marketing, and solicitation	Yes	0.05	Yes	0.05
Fee setting	Yes	0.05	Yes	0.05
Licensing requirements on management	Yes	0.02	No	n.a.
Other restrictions	Yes	0.02	No	n.a.
Temporary movement of people	Yes	0.01	No	n.a.
Total weight		1.00		0.38

Source: Nguyen-Hong (2000) Table 2.2.

Table 5. Weighting/Scoring System Used by Hardin and Holmes (1997)

Type of restriction	Weight
Foreign equity limits on all firms	
no foreign equity permitted	1
less than 50 percent foreign equity permitted	0.5
more than 50 percent and less than 100 percent foreign equity permitted	0.25
Foreign equity limits on existing firms, none on greenfield	
no foreign equity permitted	0.5
less than 50 percent foreign equity permitted	0.25
more than 50 percent and less than 100 percent foreign equity permitted	0.125
Screening and approval	
investor required to demonstrate net economic benefits	0.1
approval unless contrary to national interest	0.075
notification (pre or post)	0.05
Control and management restrictions	
all firms	0.2
existing firms, none for greenfield	0.1
Input and operational restrictions	
all firms	0.2
existing firms, none for greenfield	0.1

Source: Hardin and Holmes (1997) Table A1.

Table 6. Weighting/Scoring System Used by Marko (1998)

Weight	Extent of Restriction
Limitations on Market Access - Cross Border Supply	
1.00	None
0.75	Services unrestricted as at later date
0.50	Subj. to commercial arrangements w. licensed operator(s)
0.25	Only through network of existing operator(s)
0.00	Unbound
Limitations on Market Access - Consumption Abroad	
1.00	None
0.50	Callback not allowed
0.25	Only through network of existing operator(s)
0.00	Unbound
Limitations on Market Access - Commercial Presence	
1.00	None
0.75	Foreign equity allowed greater than 50 percent
0.50	Foreign equity allowed less than 50 percent
0.25	Services exclusively provided
0.00	Unbound
Limitations on Market Access - Presence of National Person	
1.00	None
0.50	Unbound except as indicated in horizontal section
0.00	Unbound
Limitations on National Treatment - Cross Border Supply	
1.00	None
0.50	Unbound except as indicated in horizontal section
0.00	Unbound
Limitations on National Treatment - Consumption Abroad	
1.00	None
0.50	Unbound except as indicated in horizontal section
0.00	Unbound
Limitations on National Treatment - Commercial Presence	
1.00	None
0.75	Restrictions on nationality of directors
0.50	All executives and managers must be citizens
0.25	Conditional up passage of Acts
0.00	Unbound
Limitations on National Treatment - Presence of Natural Person	
1.00	None
0.50	Unbound except as indicated in horizontal section
0.00	Unbound

Source: Marko (1998) Table 3.3.

Table 7. An Example of the Scoring System Used by Claessens and Glaessner (1998)

Restrictions on establishment and ownership	Scores
No limits on establishment or equity acquisition/participation in domestic banks/companies; current practice of grating new licences	5
Foreign branch establishment(s) permitted to establish within specific limits; allowed foreign equity participation in domestic banks/companies: 51 percent and up but less than 100 percent	4
No new licences granted in practice; entry limited to joint ventures only; allowed foreign equity participation in domestic banks/companies of 35 percent to 50 percent	3
Allowed foreign equity participation in domestic banks/companies of 15 percent to 34 percent; economic needs test for foreign broker licences	2
Non-prudential government approval required for establishment (minimum limits on amount of DFI, "certain criteria eligibility"); allowed foreign equity participation in domestic banks/ companies: 0 percent to 14 percent	1

Source: Compiled from Claessens and Glaessner (1998) Appendix.

Table 8. Weights/Scoring System Used by Mattoo (1998)

Modal Weights in Insurance and Banking				
	Insurance		*Banking*	
	Life	*Non-life*	*Deposits*	*Lending*
Cross-border supply	0.12	0.20	0.12	0.20
Consumption abroad	0.03	0.05	0.03	0.05
Commercial presence	0.85	0.75	0.85	0.75
Scores for Commitments on Cross-Border Supply & Consumption Abroad				
"Unbound"				0
"None"				1
"Some restrictions"				0.5
Scores for Commitments on Commercial Presence				
No new entry or unbound for new entry				0.10
Discretionary licensing for new entry				0.25
Ceiling on foreign equity at less than 50 percent				0.50
Ceiling on foreign equity at more than 50 percent				0.75
Restrictions on the legal form of commercial presence				0.75
Other minor restrictions				0.75
"Unbound"				0
"None"				1

Source: Compiled from Mattoo (1998) Annex 1.

Table 9. Hoekman's (1995) Frequency Measures

	HIC	LMIC	Canada
Market Access			
Unweighted average "count" (sectors-modes listed as a share of maximum possible)	47.3	16.2	56.8
Average coverage (weighted by openness/binding factors)	35.9	10.3	43.3
Coverage/"count" (average coverage as a share of the average count)	75.9	63.6	76.3
"No restrictions" as a share of average count	57.3	45.5	52.8
National Treatment			
Unweighted average "count" (sectors-modes listed as a share of maximum possible)	47.3	16.2	56.8
Average coverage (weighted by openness/binding factors)	37.2	11.2	46.0
Coverage/"count" (average coverage as a share of the average count)	78.6	69.1	81.1
"No restrictions" as a share of average count	65.1	58.0	62.5

Source: Compiled from Tables 4 and 6 in Hoekman (1995). HICs are the high-income countries; LMICs are the low- and middle-income countries

Table 10. Degree of Openness Indices for Financial Services: Commitment (C) versus Practice (P)

	Banking		Securities		Insurance		Capital Control
	C	*P*	*C*	*P*	*C*	*P*	*P*
Hong Kong	4.20	4.75	4.00	4.40	4.40	4.00	4.80
Indonesia	3.15	3.20	3.50	3.00	3.10	2.60	3.60
South Korea	1.10	1.70	1.70	2.10	1.20	2.60	2.65
Malaysia	2.40	2.40	2.50	2.50	2.10	2.10	2.80
Philippines	2.80	3.35	2.40	2.40	2.90	2.80	2.45
Singapore	2.25	2.50	2.70	2.70	4.10	4.10	4.40
Thailand	2.95	2.85	2.00	2.00	2.80	2.80	4.20
India	2.70	2.25	2.50	2.10	1.00	1.00	1.50
Average	2.69	2.88	2.66	2.65	2.70	2.75	3.30

Source: Claessens and Glaessner (1998) Table 10.

Table 11. Liberalization Indices for Banking and Direct Insurance by Mattoo (1998)

	Banking		Direct Insurance	
	Deposits	Lending	Life	Non-life
Australia	0.67	0.80	0.85	0.69
Canada	0.67	0.61	0.64	0.69
European Union	0.67	0.61	0.64	0.69
Iceland	0.88	0.80	0.64	0.59
Japan	0.88	0.80	0.85	0.88
New Zealand	0.88	0.80	0.85	0.69
Norway	0.88	0.80	0.64	0.69
Switzerland	0.88	0.80	0.64	0.69
United States	0.67	0.61	0.64	0.69
Developed Country Average	0.79	0.74	0.71	0.697

Source: Annex Table 3 in Mattoo (1998).

Table 12. FDI Restrictiveness Indices by Hardin and Holmes (1997)

	Australia	Canada	China	Hong Kong	Indonesia
Business	0.183	0.225	0.36	0.015	0.56
Communications	0.443	0.514	0.819	0.35	0.644
Construction	0.175	0.2	0.4	0	0.525
Distribution	0.175	0.2	0.275	0.05	0.525
Education	0.175	0.2	0.525	0	0.525
Environmental	0.175	0.2	0.275	0	0.525
Financial	0.45	0.375	0.45	0.233	0.55
Health	0.175	0.2	0.275	0	0.525
Tourism	0.175	0.2	0.283	0	0.525
Recreational	0.175	0.2	0.275	0	0.525
Transport	0.204	0.235	0.455	0.093	0.525

	Japan	Korea	Malaysia	Mexico	New Zealand
Business	0.06	0.565	0.316	0.289	0.086
Communications	0.35	0.685	0.416	0.739	0.434
Construction	0.05	0.75	0.775	0.45	0.075
Distribution	0.05	0.625	0.075	0.325	0.075
Education	0.2	0.55	0.075	0.45	0.075
Environmental	0.117	0.7	0.075	0.075	0.075
Financial	0.358	0.875	0.608	0.554	0.2
Health	0.05	0.55	0.317	0.408	0.075
Tourism	0.05	0.617	0.542	0.275	0.075
Recreational	0.05	0.55	0.175	0.075	0.075
Transport	0.114	0.573	0.122	0.283	0.131

	Papua New Guinea	Philippines	Singapore	Thailand	United States
Business	0.3	0.479	0.261	0.775	0.005
Communications	0.475	0.758	0.518	0.838	0.345
Construction	0.3	0.475	0.25	0.775	0
Distribution	0.3	0.475	0.25	0.775	0
Education	0.3	0.475	0.25	0.775	0
Environmental	0.3	0.475	0.25	0.775	0
Financial	0.3	0.954	0.378	0.875	0.2
Health	0.3	0.475	0.25	0.775	0
Tourism	0.3	0.808	0.317	0.775	0
Recreational	0.3	0.475	0.25	0.775	0
Transport	0.3	0.975	0.25	0.78	0.025

Source: Table A2 in Hardin and Holmes (1997).

Table 13. Quantity Impacts of Restrictions on Investment in Telecommunications

	Fixed Services MA Restrictions	Fixed Services NT Restrictions	Mobile Services MA Restrictions
United States	0.0	0.0	0.0
United Kingdom	0.0	0.0	0.0
France	0.9	5.1	1.8
Germany	0.9	0.0	1.6
Italy	3.4	0.0	4.4
Japan	0.7	0.0	1.1
Netherlands	0.6	0.0	1.1
Spain	6.1	0.0	7.5
Belgium	0.6	3.0	1.2
Luxembourg	0.8	0.0	2.2
Hong Kong	-	-	-
Austria	3.5	0.0	2.2
Canada	0.3	3.5	2.8
Switzerland	3.3	0.0	5.1
Korea	5.5	7.0	9.4
China	110.0	267.0	115.0
Turkey	29.0	18.9	63.0
Singapore	4.8	2.8	2.9
Sweden	2.4	0.0	2.2
Australia	0.8	0.0	1.8

Source: Compiled from Warren (2001b) Table 6.7 (The data for Hong Kong are missing in the original table).

Table 14. The Effects of Non-Prudential Restrictions on Net Interest Margins

	Restrictions on foreign banks	Restrictions on all banks
Argentina	5.34	0.00
Australia	9.30	0.00
Canada	5.34	0.00
Chile	34.00	23.67
Colombia	18.35	3.73
European Union	5.32	0.00
Hong Kong	6.91	2.97
Indonesia	49.32	5.26
Japan	15.26	9.99
Malaysia	60.61	21.86
Philippines	47.63	10.79
Singapore	31.45	8.39
South Korea	36.72	14.93
Switzerland	5.95	0.00
Thailand	33.06	0.00

Source: Kalirajan et al (2001), Table 13.4.

Table 15. The Cost Impact of Foreign Barriers to Establishment in Food Distribution

	Cost Impact (Percent)
Australia	0.57
Belgium	4.87
Canada	3.09
Chile	1.32
France	5.16
Greece	0.25
Hong Kong	0.06
Indonesia	3.66
Ireland	2.70
Japan	2.26
Malaysia	8.23
Netherlands	2.73
New Zealand	0.77
Singapore	0.03
South Africa	0.47
Switzerland	5.24
United Kingdom	2.76
United States	2.26

Source: Kalirajan (2000) Table 4.1.

Table 16. Price Impacts of Restrictions on Foreign Engineering Service Suppliers (Percent)

Economy	Foreign barriers to establishment	Foreign barriers to ongoing operations	All foreign barriers
Austria	11.1	3.5	14.5
Mexico	13.9	0.2	14.2
Malaysia	11.3	0.7	12.0
Indonesia	9.9	0.3	10.2
Germany	4.7	5.5	10.2
Spain	5.1	3.7	8.7
U.S.	5.1	2.2	7.4
Sweden	5.9	0.9	6.8
Japan	3.1	3.4	6.6
Canada	3.1	2.2	5.3
Singapore	4.9	0.2	5.0
Hong Kong	3.6	1.5	5.1
South Africa	3.5	0.2	3.7
Netherlands	3.5	0.2	3.7
Australia	2.1	0.7	2.8
U.K.	2.3	0.2	2.5
Finland	1.8	0.5	2.3
Denmark	0.3	0.8	1.1
France	0.3	0.6	0.9
Belgium	0.3	0.2	0.5

Source: Nguyen-Hong (2000) Table 4.3.

Table 17. Francois and Hoekman's (1999) Estimated Tariff Equivalents Based on a Gravity Model (Percent)

	Average Tariff on Merchandise	Business/ Financial	Construction
North America	6.0	8.2	9.8
Western Europe	6.0	8.5	18.3
Australia and NZ	5.0	6.9	24.4
Japan	6.0	19.7	29.7
China	18.0	18.8	40.9
Taiwan	n.a.	2.6	5.3
Other NICs	n.a.	2.1	10.3
Indonesia	13.0	6.8	9.6
Other Southeast Asia	10.0	5.0	17.7
India	30.0	13.1	61.6
Other South Asia	25.0	20.4	46.3
Brazil	15.0	35.7	57.2
Other Latin America	12.0	4.7	26.0
Turkey	13.0	20.4	46.3
Middle East & North Africa	20.0	4.0	9.5
CEECs + Russia	10.0	18.4	51.9
South Africa	6.0	15.7	42.1
Other Sub-Saharan Africa	n.a.	0.3	11.1
Rest of World	n.a.	20.4	46.3

Source: Hoekman (2000) Table 3.

Table 18. Average Gross Operating Margins of Firms, 1994 – 1996 (Percent)

	Mfg.	All Services	Rec.	Business Services	Const.	Consult.
Australia	15.5	16.6	18.0	13.8	15.3	7.0
Canada	22.6	32.9	60.0	51.7	14.4	19.2
Chile	40.8	44.0			68.7	
China	28.1	49.5			45.9	67.1
EU	23.8	31.6	43.0	32.1	19.3	22.1
Hong Kong	12.8	18.1		6.5	12.9	11.5
Indonesia	34.3	41.3		81.1	22.9	25.3
Japan	26.4	28.7	28.0	31.6	14.2	28.6
Korea	25.7	25.8		41.2	15.3	
Malaysia	6.0	21.6	13.0		18.3	14.7
Mexico	39.3	37.2	20.0		25.7	37.3
NZ	16.6	26.8			13.8	
Philippines	28.6	42.3	20.0		40.2	
Singapore	11.1	22.0	47.0	8.6	10.6	7.7
Taiwan	25.1	41.3	80.0	36.3	21.6	11.1
Thailand	27.3	52.6	85.0	35.8	38.1	-8.8
U.S.	21.1	42.3	47.0	56.2	20.2	
Other Cairns	31.1	39.0			28.9	26.2
	Finance	Health	Hotel	Retail	Whole-sale	Trans./ Utilities
Australia	41.0		27.3	7.9	9.1	
Canada	45.0	2.3	67.8	12.0	16.0	36.5
Chile	55.0			21.3	27.9	46.8
China	34.0		77.5	24.4	25.5	46.9
EU	52.0	22.3	23.7	23.6	19.9	32.6
Hong Kong	25.0		31.3	10.1	6.9	31.0
Indonesia	54.0		68.2	26.4	24.8	45.3
Japan	41.0	40.1	27.2	32.9	15.6	20.6
Korea				26.7	14.9	31.2
Malaysia	28.0	24.3	38.7	11.2	10.8	30.7
Mexico	33.0		49.6	28.4	25.0	51.0
NZ	58.0		26.9	6.6	19.7	35.6
Philippines	54.0		55.8	43.9	40.3	42.3
Singapore	46.0	29.2	28.2	5.4	7.9	28.0
Taiwan	65.0		74.5	21.5	23.2	38.9
Thailand	60.0	40.6	55.5	44.2	25.6	56.7
U.S.	56.0	37.0	48.5	34.6	27.0	43.4
Other Cairns	70.0	29.3	64.6	24.2	22.9	52.4

Source: Hoekman (2000) Table 4.

Table 19. Changes in Economic Welfare from an Open Club among Airlines in Five Countries (In millions of Australian dollars)

	Scenario One	Scenario Two	Scenario Three
Club members			
Profit (gross)	-38.4	15.6	-30.4
Consumer surplus	291.6	152.1	73.2
Economic welfare	253.2	167.6	42.8
Non-club members			
Profit (gross)	- 29.7	- 24.7	- 4.3
Consumer surplus	23.4	24.3	- 0.3
Economic welfare	- 6.3	- 0.4	- 4.6

Source: Johnson et al (2001) Table 8.9.

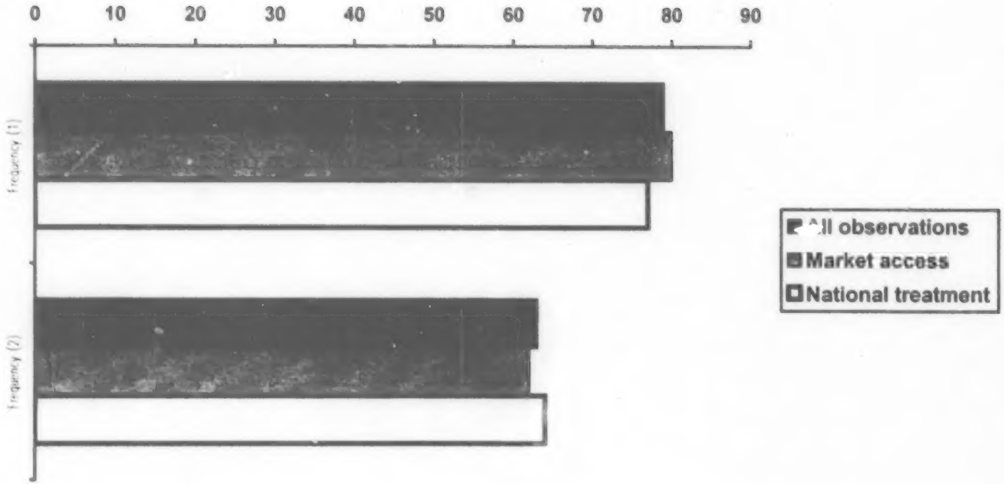

Figure 1. Average frequency measures for 16 APEC countries (Source: PECC 1995)

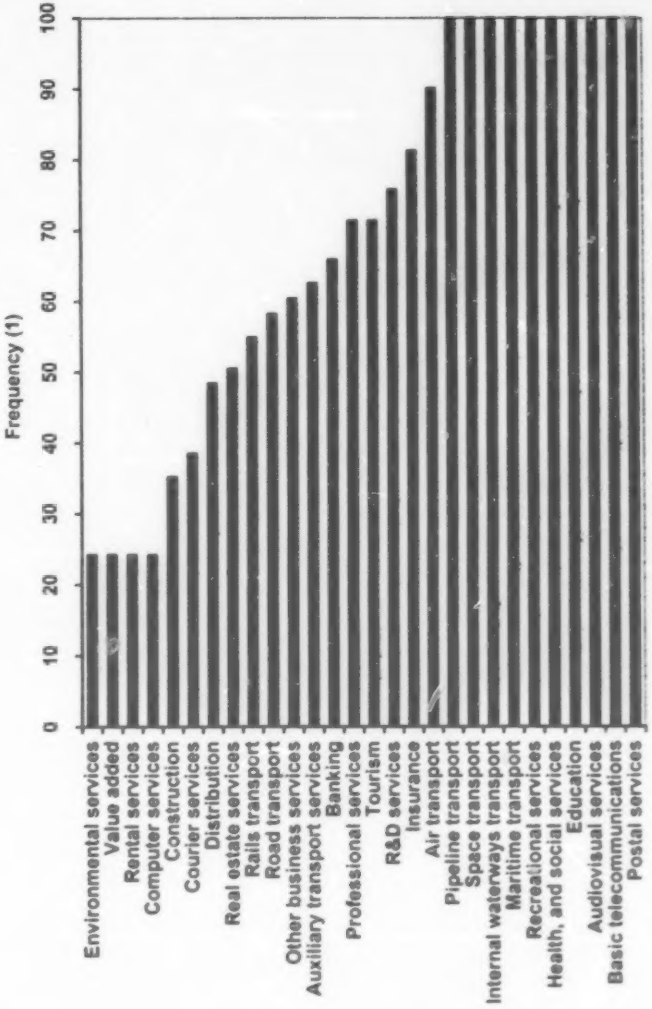

Figure 2. Frequency measures for Canada (Source: PECC 1995)

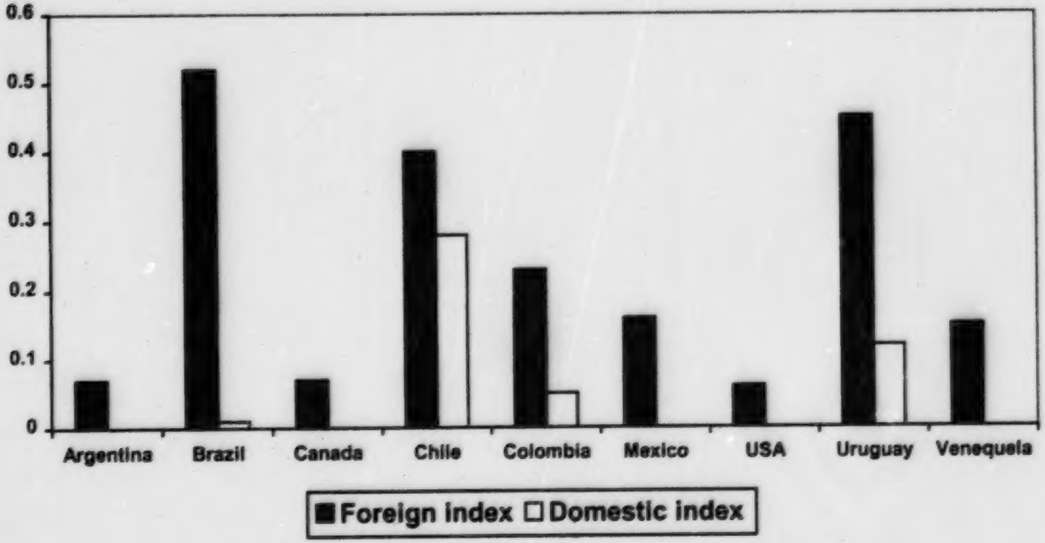

Figure 3. Restrictiveness indices for banking (Source: McGuire and Schuele 2001)

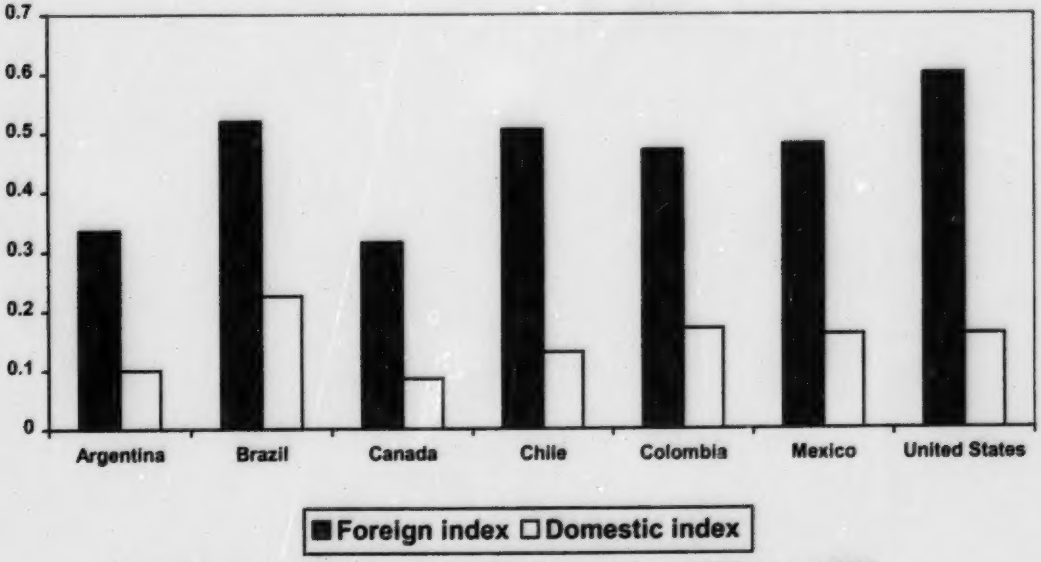

Figure 4. Restrictiveness indices for maritime transport (Source: McGuire et al 2001)

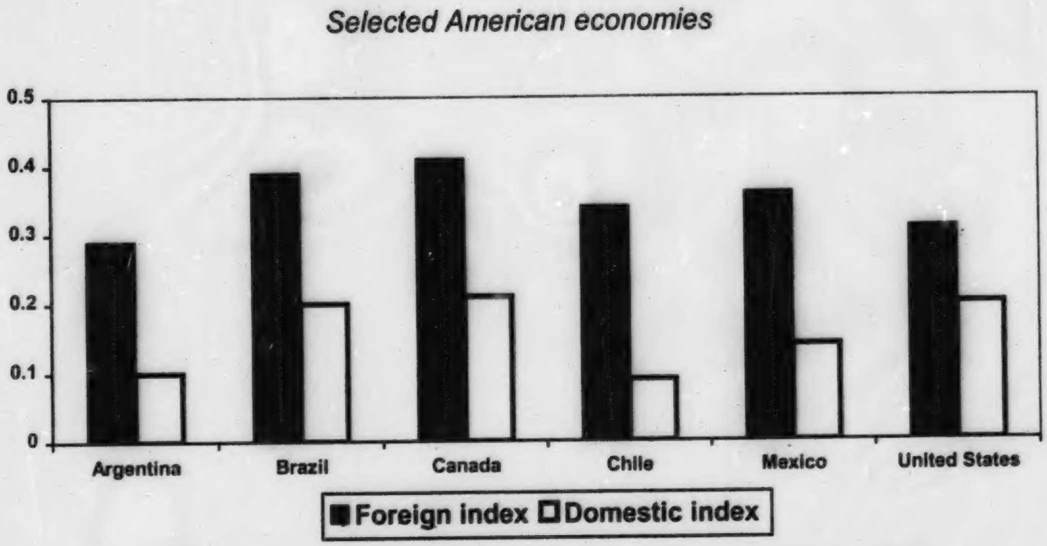

Figure 5. Restrictiveness indices for accountancy services (Source: Nguyen-Hong 2000)

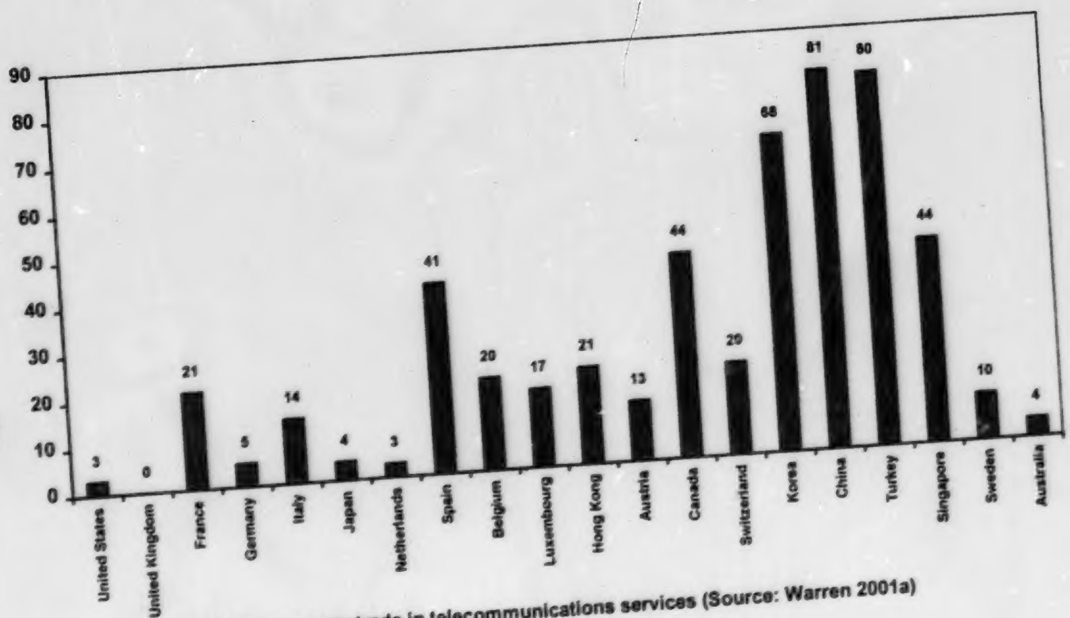

Figure 6. Openness to trade in telecommunications services (Source: Warren 2001a)

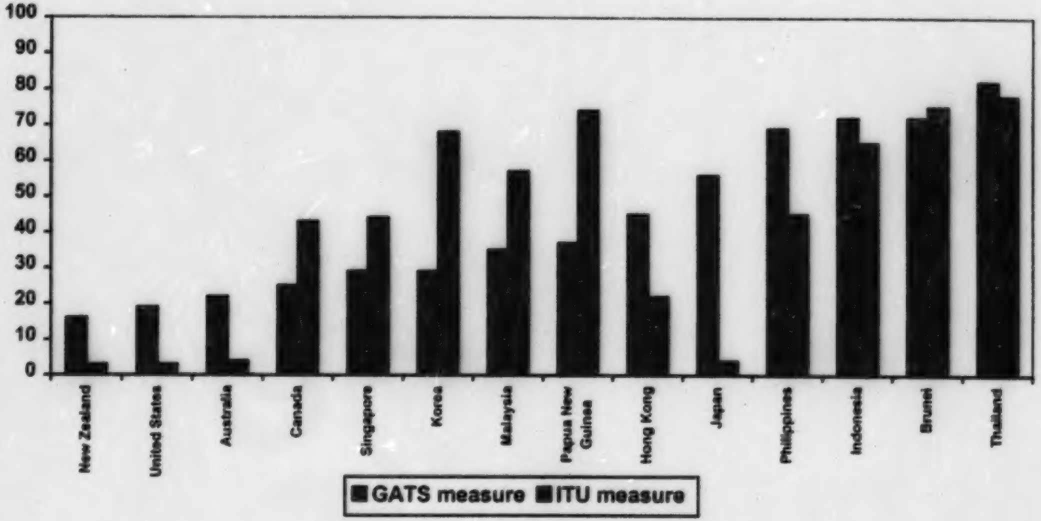

Figure 7. Comparison of ITU measures and GATS measures for telecommunications services (Source: Warren 2001a)

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Trade and Investment in Canada's Services Sector: Performance and Prospects

Shenjie Chen[*]

Introduction

It is commonly known that the services sector has been growing as a share of GDP in most industrialized economies, Canada being no exception. The role that trade and investment have played in this is less well known. Nor, by the same token, is there a widespread understanding of the prospects for gains from additional trade in services that might be achieved through liberalization in the round of multilateral trade negotiations launched at Doha in November 2001.

This chapter seeks to at least partly fill this gap. It reviews the secular rise in importance of the services sector in Canada's economy in recent decades and examines, on an industry-by-industry basis, the role that trade and investment play in these industries.

To provide a comprehensive picture of Canada's trade in services, it pulls together such statistics as are available on all four modes of services trade under the WTO's General Agreement on Trade in Services (GATS): cross-border trade, consumption abroad, commercial presence and movement of natural persons. This review establishes that services trade is already more significant than commonly thought.

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The chapter considers the implications of further liberalization and how it might impact on Canada's economy. It shows that trade and investment liberalization is likely to facilitate the structural adjustment toward a knowledge-based economy. Since knowledge-intensive sectors tend to offer more highly paid jobs for well-educated knowledge workers than do other sectors, liberalizing international trade and investment in services is likely to promote the creation of high-quality jobs that enhance the standard of living in Canada.

The secular rise in the services share of output

A pronounced secular rise in the services sector's share of GDP is a standard feature of the evolution of economies from rural agricultural to urban industrialized. For Canada, the structural shift toward a services-dominated economy is best shown by Canada's changing employment pattern over the decades, as shown in Table 1.

Table 1. Canada's Sector Shares of Employment (percent)

	Agriculture	Other resources	Mfg.	Construction and utilities	Services	Industry unspecified
1891	45.7	n/a	n/a	n/a	n/a	n/a
1911	34.2	5.0	17.4	7.7	32.5	3.2
1921	32.8	4.0	16.7	6.1	36.2	4.3
1931	28.7	4.3	16.9	6.9	38.8	4.3
1941	25.8	5.7	21.9	5.8	39.8	1.1
1951	18.4	4.4	26.5	7.8	42.9	0.0
1961	11.2	3.0	24.0	7.4	54.3	0.0
1971	6.2	2.8	22.2	7.2	61.6	0.0
1981	4.4	2.9	19.3	7.1	66.3	0.0
1991	3.5	2.3	14.7	6.8	72.6	0.0
2000	2.5	1.9	15.3	6.3	74.1	0.0

Sources: Before 1951, *Statistics Canada's Historical Statistics*, Series D8-85. After 1951, *Statistics Canada's Labour Force Survey*.

In the first half of the 20th century, the gains in the services sector went hand in hand with a rise in the manufacturing share in total employment; since the 1950s, the rise in the services sector's share coincided with a decline in manufacturing's share of employment. The major resource sectors—agriculture, forestry and mining—meanwhile, witnessed a continuation of the decline in their shares from the first half of the century. Table 2 shows the evidence for this structural shift over the postwar period, this time in the GDP accounts.[1]

Table 2. Canada's Sector Shares of GDP (percent)

	Agriculture	Other resources	Mfg.	Construction and utilities	Services
1951	11.8	7.0	29.5	7.2	44.5
1961	4.3	6.2	24.1	10.3	55.1
1971	3.0	5.2	21.8	10.1	59.8
1981	3.0	8.4	18.5	10.9	59.3
1991	1.7	4.6	16.3	10.0	67.3
1997	1.5	5.4	18.9	8.8	65.3

Source: Statistics Canada: Historical Statistics; CANSIM Matrices 4765 and 4766.

In terms of shifts of economic resources, the data on investment paint a broadly similar picture; namely, an increasing weight of the services sector in the share of overall capital formation in the Canadian economy. In the case of this indicator, while this statement holds for the longer term, as shown in Table 3, there is less consistency here, since the services sector's share of the capital stock fell from the 1960s to the 1980s before beginning to expand again. Nonetheless, by the end of the 1990s, it was at an all-time high.

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[1] Note: the latest year for which reliable data are available on the services share of GDP is 1997; this reflects the way that the services portion of the National Accounts is compiled. It should be noted that the sectoral shares of GDP tend to be cyclically sensitive: that is, since services tend to be less cyclical than the goods sectors, the services sector's share of GDP tends to be higher during economic slowdowns and to fall back somewhat during economic expansions. Accordingly, care should be taken not to attach too much significance to specific figures in given years.

Table 3: Share of Capital Stock by Sector, in constant 1992 dollars (percent)

	Agriculture	Other Resources	Mfg.	Construction & utilities	Services
1955	9.8	6.3	15.7	11.0	57.1
1961	7.2	8.2	14.7	12.4	57.5
1971	5.7	10.6	14.2	13.5	56.0
1981	5.5	11.9	13.3	15.9	53.4
1991	2.9	10.6	12.9	17.8	55.8
1999	2.3	10.3	11.3	17.6	58.6

Source: Statistics Canada, Catalogue 13-568. Note: The net capital stock is calculated based on the formula of geometrical depreciation.

The data in Tables 1 and 2 (although, interestingly, not Table 3) suggest that the structural shift toward services began to peter out in Canada toward the end of the 20th Century. The services sector's share of GDP was at best flat in the 1990s (the decline recorded between 1991 and 1997 is primarily due to the tendency of the services sector to be higher during cyclical downturns such as in 1991, and to fall back during an upswing such as was in force in 1997). Corroborating evidence for the slowdown is provided by the fact that growth in the sector's share of employment slowed sharply in the 1990s.

Also notable is the gap between the gain since 1971 in the services sector's share of GDP of 5½ percentage points and the gain in the employment share of 12½ percentage points. Taken together with the fact that the services sector also had stronger capital formation than the economy-wide average over this period, this points to either weak productivity performance in this sector or to a decline in the sector's internal terms of trade—or to data problems in measuring the services sector's output.

Since most industrialized countries witnessed a secular increase in the services share of GDP in the last several decades, it is of interest to compare the developments in the more recent period in Canada to those in other advanced industrial countries. As shown in Table 4, Canada stands out in terms of having a comparatively small gain in the services sector's share of GDP. In part, this reflects the fact that the development of Canada's services sector had advanced further by the beginning of the 1970s than in other G7 economies—as can be seen, the economies that were the most services-intensive in 1971 (i.e. the United States, Canada and the United Kingdom) tended to have smaller increases in the services share of GDP over the reference period than did the least-services-intensive economies such as France and Germany. This strongly suggests a pattern of convergence toward a high share of services in mature industrialized economies. Nonetheless, the fact that Canada's services sector did not do as well as its counterparts in the United States and the United Kingdom is striking.

Table 4. Services as a Share of GDP in G7 Countries (percent)

	1971	1981	1991	1997	Change 1971-1997
U.S.A.***	62.8	62.9	70.1	74.5	11.7
Canada	59.8	59.3	67.3	65.3	5.5
U.K.	55.8*	59.6*	69.4	67.8	12.0
Japan	51.8*	57.9*	61.4*	60.9	9.1
Italy	50.4*	56.0*	62.5	66.7	16.3
France	50.1*	58.4*	64.7*	70.7	20.6
Germany**	44.6*	53*	57.4*	66.6	22.0

Sources: OECD, *Services Statistics on Value Added and Employment*, 1996 and 2001 editions; Bureau of Economic Analysis, U.S. Department of Commerce, Statistics Canada, CANSIM Matrices 4765 and 4766.

* Except for the United States, data marked by * are compiled based on the International Standard Industrial Classification, version 2; otherwise, data are based on version 3.

** Data include West Germany only in the years 1970, 1980 and 1990.

*** Before 1987, all data are compiled based on the U.S. Standard Industrial Classification, 1972 version; after that, data are based on the 1987 version.

The developments in Canada's services sector in the most recent years came in the context of intense trade-policy activism, the most notable events being the negotiation of the Canada-U.S. Free Trade Agreement, and the NAFTA, the conclusion of the Uruguay Round and the coming into force of the GATS. Accordingly, it is of interest to examine the role of trade and investment in Canada's services industries, on an industry-by-industry basis, to determine what role, if any, trade played in shaping the broad trends described above; and, against that background, to consider the prospects for liberalization of services in the Doha Round.

Canada's Services Trade: Structural Features

General considerations and caveats

Analysis of services trade is more complicated than the situation in goods trade because of the different modes through which services trade can be undertaken. As noted earlier, the General Agreement on Trade in Services (GATS) considers trade in services to be conducted in four modes:

1. services being supplied from one country to another (cross-border trade);
2. consumers or firms making use of a service in another country (consumption abroad);
3. a company setting up a subsidiary in another country (commercial presence); and
4. individuals travelling from their own country to supply services in another (movement of natural persons).

No country has ever constructed a data set to pull together a comprehensive picture of services trade through all four modes and across all sectors. However, by drawing on different sources, such a data set can be roughly approximated.

The services trade statistics in the balance of payments (BOP) capture a large part of services trade through cross-border transactions and consumption abroad; to some extent, they also reflect trade effected through movement of natural persons.[2] However, given the purpose of the BOP accounts to capture flows between countries, they do not capture *any* services trade under GATS Mode 3, the export of services through "commercial presence." This is because a subsidiary that establishes commercial presence is a resident of the country in which it is set up; accordingly, its sales in this territory to the local population are transactions between residents and so escape BOP recording. At the same time, such sales are considered trade in services under the GATS definition.

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[2] This being said, the BOP-based data cannot be cleanly broken down into Mode 1, 2 and 4, nor do they provide a complete picture of Mode 4. Mode 2 data (consumption abroad) are available, although the quality is weak as the figures are estimated from the number of visitors and survey

This gap is being filled by a recently developed statistical domain known as Foreign Affiliates Trade in Services (FATS). The FATS data measure sales of services by affiliates established in foreign countries to local persons and so correspond to the GATS notion of services trade through commercial presence.

Information on Canada's Mode 3 services imports is available from data on the operations of foreign majority-owned firms in Canada; these data include sales, employment and value-added by multinational firms. However, to obtain information on Canada's Mode 3 services exports, we have to turn to foreign sources. Here, the only data that are readily available are those published by the U.S. Department of Commerce on sales to U.S. residents by the U.S. affiliates of Canadian companies. Given the significance of the United States for Canadian exports, this does, however, give us at least a good partial picture of Canada's Mode 3 services exports.

There are two further complications of note.

First, whereas the FATS data are compiled according to the Standard Industrial Classification (SIC), the BOP data are recorded on the basis of type of service. This difficulty can be circumvented, however, by drawing on the input-output tables compiled by Statistics Canada.[3] The input-output (I-O) data are

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data on expenditure patterns of visitors. However, insofar as information on sales through Mode 4 (sales by movement of natural persons to the foreign country) are recorded at all, they are not separated from records of sales on a cross-border basis.

[3] Statistics Canada, "The Input-Output Structure of the Canadian Economy 1961-1981," Catalogue No. 15-510.

derived from the BOP data and thus capture, to varying degrees, trade through Modes 1, 2 and 4. However, since I-O data are converted to the same SIC basis as the FATS statistics, they allow direct comparisons of commercial presence and cross-border trade.[4]

Second, given the data sources, we are constrained to a fairly short period for analysis. On the one hand, the FATS data do not go back very far in time (for imports, they reach back only to 1986 and, for exports to the United States, they miss the important banking sector and go back only to 1989). On the other hand, the I-O data only appear with a considerable lag after the BOP data are published; accordingly, the latest year for which data are available is 1997.

This analysis thus is carried out within rather difficult constraints; nonetheless, some interesting observations on Canada's trade and investment in services can be obtained.

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[4] One complication in the I-O data is that they attribute some portion of the value of merchandise exports to the services account. This reflects the valuation basis on which I-O goods data are calculated. In the I-O framework, output is valued at producers' prices (or factory-gate prices). The value of goods exports in the BOP accounts, however, is on a "free on board" or f.o.b. basis—that is, the value of the goods at the port of exit, including domestic freight, insurance and other associated services costs charged to that point. In the I-O framework, the difference between factory-gate and f.o.b. values is treated as a "transportation margin" and attributed to the transportation sector. Thus, while total exports of goods and services in the input-output account match the balance of payments totals, there is a shift from the merchandise account to the service account of that portion of the value that represents these transportation margins. A similar effect occurs in the wholesale and retail trade sectors. In the I-O framework, wholesale and retail "margins" associated with goods trade are imputed to these sectors as services exports. On the other hand, the valuation of imports is taken at the Canadian border. As a result, I-O-based merchandise imports are greater than BOP-based merchandise imports, while I-O-based services imports are smaller than BOP-based imports. For a detailed discussion of this issue, see Statistics Canada's "*The Input-Output Structure of the Canadian Economy, 1961-1981*", Catalogue 15-510.

Overall performance in services trade

Based on BOP data, Canada's total services exports under GATS Modes 1, 2 and 4, insofar as the BOP data capture trade under these various modes, amounted to $55.3 billion in 2000, or 5.2 percent of GDP. For imports, the corresponding figure was $62 billion or 5.9 percent of GDP. Generally speaking, the services trade share of GDP has been rising, but not as fast as that of merchandise trade; accordingly, the share of services trade in overall trade in goods and services has actually tended to decline (See Table 5).

Table 5: Canada's Services Trade as a Share of GDP and Total Trade (percent), Balance of Payments Basis

Year	Services exports/GDP	Services imports/GDP	Services exports/Total exports	Services imports/Total imports
1951	2.9	3.5	12.8	14.9
1961	2.4	3.7	13.9	20.2
1971	2.7	3.7	12.7	18.7
1981	2.8	4.0	10.5	15.3
1991	3.4	5.1	13.6	19.8
2000	5.2	5.9	11.6	14.6

Source: Statistics Canada, *Canadian Economic Observer: Historical Statistical Supplement.*

This is, of course, an incomplete picture of services trade based on GATS definitions. Just how incomplete it is becomes evident when we integrate the information on Mode 3 trade. In 1997, Canadians purchased $126.7 billion of private services from majority-owned Canadian affiliates of foreign firms, *2.4 times* the value of Canada's cross-border imports of $52.6 billion from the world. While the data on Canadian services exports through Mode 3 are only partial, the story is quite similar. In 1997, the affiliates of Canadian service firms in the United States sold $48.5 billion of non-banking private services to U.S. customers, *2.1 times* the value of Canada's cross-border services exports to the United States of $22.7 billion in the same year, based on BOP data. Since services exports to countries other than the United States are likely to be even more dependent on Mode 3 (not least because travel costs and time zone differences would make other modes less attractive when dealing with customers in Europe and the Far East), the ratio of Mode 3 exports to cross-border exports probably lies above the 2.1 figure obtained for private non-banking services into the United States, and, indeed, it is open to speculation whether this ratio would approach the 2.4 ratio observed for services imports.

These data, however incomplete, provide the basis for a rough assessment of the overall size of Canada's services trade through the four GATS modes, as shown in Table 6. A range for global Mode 3 services exports is provided based on the ratios of 2.1 and 2.4 discussed above

Table 6: Canada's Overall Services Trade through the Four GATS modes, 1997 (C$ billions)

	Modes 1, 2 and 4	Mode 3	Total
Exports	43.8	92.0 – 105.0	135.8 – 148.8
Imports	52.6	126.7	179.3
Balance	-8.8	-34.7 – -21.7	-43.5 – -30.5

Sources: The U.S. Department of Commerce, the Bureau of Economic Analysis, Statistics Canada

As can be seen, the value of overall services trade in 1997, which may be estimated to be upwards of C$315 billion, was several times larger than the figure of C$96.4 billion obtained from the BOP data. This demonstrates that Mode 3 is actually, by far, the preferred mode for services trade; *ipso facto*, the usual measures of services trade from the BOP data that exclude Mode 3 sales vastly understate the importance of services trade, as understood in the GATS.

Insofar as the above data and estimates can be relied on, Canada would appear to have been in a deficit position on trade in services across the 4 modes of trade in 1997. Thus, there is *prima facie* support for the possibility that Canada lacks a comparative advantage in services trade.

However, this does not necessarily lead to the conclusion that Canada's services sector would lose under international trade and investment liberalization. This reflects the fact that, between industrialized countries, trade appears to be motivated far more by product differentiation at the firm level.[5] Moreover, as will be discussed below, there is a wide range of services industries. In a qualitative sense, what matters is whether Canada will do well in the types of high-quality, knowledge-intensive services that offer well-paying jobs. Finally, there is the possibility that the deeper liberalization that took place in the goods sectors, particularly through the Canada-U.S. FTA and the NAFTA, as well as in foreign direct investment, resulted in less cross-border services trade suffering.[6] In other words, liberalizing services to match the liberalization that has already taken place in the goods trade may restore the sector's internal competitiveness.

To get at these issues, we must look at the export performance of Canada's services industry by sector.

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[5] There are two main trade theories on differentiated products. One is based on the assumption of imperfect competition and increasing returns to scale. For a detailed description of this theory, see: Paul Krugman (1980), "Scale Economics, Product Differentiation, and the Pattern of Trade," *American Economic Review* 70:950-959; and Elhanan Helpman and Paul Krugman (1985), *Market Structure and Foreign Trade: Increasing Returns, Imperfect Competition, and the International Trade* (Cambridge, M.A.: MIT Press, 1985). The second theory is based on the assumption of constant returns to scale with internationally identical but not homothetic consumer preference. See Bergstrand, Jeffrey H. (1990) "The Heckscher-Ohlin-Samuelson Model, the Linder Hypothesis and the Determinants of Bilateral Intra-Industry Trade," *Economic Journal* 100, (December), pp. 1216-1229, and Alan Deardorff, "Determinants of Bilateral Trade: Does Gravity Work in a Neoclassical World?" NBER Working Paper Series 5377, 1995.

[6] The possibility that partial liberalization can hurt a particular sector is demonstrated elsewhere in the present volume in Brian R. Copeland, "Benefits and Costs of Trade and Investment Liberalization in Services: Implications from Trade Theory."

To examine Canada's services sector's trade on an industry-by-industry basis, we rely in the first instance on the input-output data set, which provides an industry breakdown of BOP accounts.[7] For analytical purposes, we regroup some of the industrial groupings in the input-output table. The main emphasis is on determining how Canada appears to be doing in the knowledge-intensive sectors versus those that are less knowledge-intensive.

In the discussion below, we will refer to "cross-border trade" as all sales captured by the input-output accounts, which, as discussed earlier, covers Mode 1 (cross-border), Mode 2 (consumption abroad) and perhaps some part of Mode 4 (movement of natural persons in their capacity as suppliers, insofar as these transactions result in flows recorded in the BOP accounts). Meanwhile, "affiliate sales" refers to Mode 3 (commercial presence) activity.

Business services

Business services comprise computer-related, accounting, legal, architectural, engineering and advertising services. Services in these categories provide the kinds of jobs that would normally be considered "knowledge-intensive," requiring post-secondary degrees. Since Canada has one of the world's most highly educated workforces, it would be reasonable to expect good performance in trade in these sectors; moreover, Canada *needs* to perform well in these areas to preserve a spot among the best-performing economies in the world.

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[7] As discussed earlier, it is not appropriate to use this data set to draw conclusions as to whether the *balance* of trade in the services sector is in Canada's favour or not. This reflects the fact that (a) the input-output data use factory-gate valuation for exports but at-the-border valuation for imports; and (b) transportation margins are included in services exports but not in services imports. At the industry level, small differences between imports and exports therefore should not be ascribed much meaning.

In 1997, Canada exported $9.74 billion of business services and imported an equivalent amount of $9.76 billion from the rest of the world. However, over the reference period (1986-1997), export growth (14.3 percent) far outstripped import growth (8.7 percent). This growth performance is a particularly important indicator in terms of how we view Canada's competitive position in knowledge-intensive services trade.

Table 7. Cross-Border Trade by Industry: Business Services (C$ millions)

	1986	1997	Annual average growth (%)	1986	1997	Annual average growth (%)
		Exports			Imports	
Total	2,243	9,737	14.3	3,912	9,759	8.7
• Computer & related	234	1,931	21.2	182	1,353	20.0
• Accounting & legal	60	358	17.6	84	523	18.1
• Arch., eng., & science	1,151	4,834	13.9	2,266	4,364	6.1
• Advertising	46	252	16.7	242	489	6.6
• Miscellaneous	752	2,362	11.0	1,138	3,030	9.3

Source: Appendix Table A1.

Architecture, engineering and scientific R&D) services is the most important industry segment for cross-border trade with annual exports and imports equal to $4.8 billion and $4.4 billion, respectively, in 1997. Between 1986 and 1997, Canada's exports of these services grew at an annual average growth rate of 13.9 percent, more than twice as fast as import growth of 6.1 percent over the same period.

Two-way trade in computer and related services also grew rapidly in the reference period; this, of course, is scarcely surprising in the context of the global information technology boom that characterized this period. Between 1986 and 1997, Canada's exports of computer services grew at an annual rate of 21.2 percent, increasing to $1.9 billion in 1997 from $234 million in 1986. Similarly, imports increased to $1.4 billion in 1997 from $182 million in 1986, reflecting an average annual growth rate over the reference period of 20 percent.

Canada's balance in both advertising, and accounting and legal services, was substantially negative in the reference period, but growth of exports was strong. In 1997, Canada exported $252 million of advertising services abroad and imported $489 million; however, export growth over the reference period was 16.7 percent versus only 6.6 percent for imports. In the same year, Canada exported $358 million of accounting and legal services, and imported $523 million. Export growth was also very strong in this sector (17.6 percent), although falling just short of the growth rate of imports in this sector (18.1 percent).

By contrast, Mode 3 trade in business services has been smaller, and exports, although growing strongly, fall well short of imports.

Table 8. Mode 3 Exports by Industry: (United States only): Business Services (C$ millions)

	1989	1998	Growth (%)
Total business services	394	1170	12.8
Computer & data-processing services	173	590	14.6
Information services & data processing	n/a	12	N/a
Computer-systems design & related services	n/a	578	N/a
Accounting, research, management & related services	18	206	31.3
Accounting, tax preparation, payroll & legal services	n/a	0	N/a
Management, scientific & technical consulting	n/a	7	N/a
Scientific research & development services	n/a	199	N/a
Engineering, architectural & surveying services	197	265	3.4
Architectural, engineering & related services	n/a	215	N/a
Other professional, scientific & technical services	n/a	50	N/a
Advertising	7	108	35.3

Source: Appendix Table A2.

Whereas the C$1.2 billion of business services sold by Canadian affiliates in the United States in 1998 represented only 12 percent of the value of cross-border exports of these services, Mode 3 imports rivalled cross-border flows in this category; at the same time that import growth was slower than exports.

Insofar as there are any surprises, these lie in the comparatively modest expansion seen in Mode 3 trade in computer services. While the data for 1997 imports are suppressed for confidentiality reasons, one can infer that growth in this sector was no higher than 4.5 percent (if advertising and other services registered, in fact, zero sales in 1997)—and probably half that rate given plausible assumptions about advertising and "other" business services sales that year.

Table 9: Mode 3 Imports by Industry: Business Services (C$ millions)

	1988		1997		
	Revenue	Industry share (%)	Revenue	Industry share (%)	Average growth (%)
Total business services	5,118	22.6	8,511	17.1	5.8
Computer & related	3,503	57.7	n/a	n/a	n/a
Accountant & manager	684	11.6	2,113	12.4	13.4
Offices of engineers	321	7.7	1,204	14.5	15.8
Advertising services	216	11.0	n/a	n/a	n/a
Other	394	n/a	n/a	n/a	n/a

Source: Appendix Table A3.

There are several reasons to be cautious about drawing conclusions about the computer and related services industry, however. First, this industry has been in a state of flux with rapid growth followed by a bust, and, through it all, a wave of mergers and acquisitions activity, much of it on a cross-border basis, has changed the face of the industry quite dramatically. Thus, in 1994, the last year for which data are available on Mode 3 imports of computer and related services, the revenue figures were far higher than in 1997.[8] Since cross-border merger and acquisition activity continued to be extraordinarily strong well into 2000, it is to be anticipated that the affiliate sales figures have become far larger than the 1997 data indicate.

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[8] Revenue of foreign affiliates in Canada's computer-services industry totalled $9.7 billion in 1994, accounting for 70 percent of total sales of computer services in Canada. This was the highest level of foreign commercial presence in Canada of all service industries

The large commercial presence of foreign-owned computer services firms in Canada, in the context of an industry in which cross-border trade was also growing by leaps and bounds, strongly suggests that multinational enterprises chose to deliver services from Canadian establishments so as to take advantage of Canada's low-cost but highly educated labour force.

On balance, the data on trade in business services is highly encouraging in terms of the prospects for Canada reaping benefits from further liberalization in these knowledge-intensive industries.

Finance, insurance and real estate

There is a substantial amount of cross-border trade in finance, insurance and real estate services; however, due to regulatory requirements, there is substantially more on a Mode 3 basis.

In 1997, Canada exported $6.7 billion and imported $8.5 billion of financial services from the world on a cross-border basis. Growth in exports modestly outpaced import growth.

Table 10. Cross-Border Trade by Industry: Finance, Insurance and Real Estate (C$ millions)

	1986	1997	Annual average growth (%)	1986	1997	Annual average growth (%)
		Exports			Imports	
Total	2,770	6,710	8.4	3,753	8,525	7.7
▪ Deposit-takers*	1,227	2,130	5.1	595	1,820	10.7
▪ Other finance	389	1,056	9.5	1,773	2,119	1.6
▪ Insurance	1,061	3,057	10.1	1,303	4,371	11.6
▪ Real estate	93	467	15.8	82	215	9.2

Source: Appendix Table A1. * Deposit-taking institutions include banks, other deposit-taking intermediaries and credit unions.

Insurance is the largest and fastest-growing financial-services sector in cross-border trade. In 1997, Canada's exports of insurance services grew at a respectable annual rate of 10.1

percent, reaching $3.1 billion in 1997 from $1.1 billion in 1986. Imports of insurance services totalled $4.4 billion, having increased at an annual rate of 11.6 percent from $1.3 billion in 1986. Both export and import growth were largely due to reinsurance business. This is because there are no regulatory impediments to international reinsurance; rather, international diversification of risk through reinsurance underpins the soundness of the global insurance market.

Also noteworthy is the fast growth of exports of "other financial services," relative to imports. This category includes securities-related activities, including fund management.

The vast majority of financial services trade takes place, however, through affiliate sales; this largely reflects regulatory requirements aimed at allowing domestic regulators to supervise the activities of financial institutions in the interests of local depositors and insurance policyholders—and, in the event of solvency problems, to seize the assets of the companies.

Canada's commercial presence in the U.S. financial services market is large as shown in Table 11.

Table 11. Mode 3 Exports to the United States by Industry: Finance, Insurance and Real Estate (C$ millions)

	1989	1998	Annual average growth (%)
Total	15,639	27,907	6.6
Finance, except banking	230	4,486	39.1
• Non-depository credit intermediation and related services	n/a	1,692	n/a
• Securities, commodity contracts & related activities	n/a	2,794	n/a
Insurance	10,479	15,406	4.4
Real estate	4,930	3,528	-3.6

Source: Appendix Table A2.

As can be seen, affiliates of Canadian insurers sold $15.4 billion of insurance services in the United States in 1998. As well, Canadian affiliates rang up $4.5 billion of non-banking financial services. Sales of these two types of services by

Canadian firms represented 16 and 20 percent of total affiliate sales by foreign firms in the U.S. market, respectively.

Comparable figures are not available for the banking sector. However, Canadian banks have been active in the United States and other foreign markets: 46 percent or C$4.5 billion of the earnings of the Canadian banks in 2000 came from operations abroad, much of this through commercial presence. The situation in this sector has changed rapidly in recent years, since the major Canadian banks made acquisitions in the United States alone during 2000 worth about C$1.3 billion. Accordingly, the above figures undoubtedly considerably understate Canadian Mode 3 exports to the United States, let alone to the world.

Mode 3 imports are also substantial. In 1998, Canadians bought $44 billion worth of financial services from affiliates of foreign-owned firms established in Canada, far greater than cross-border imports of similar services of $8.3 billion.

Table 12: Mode 3 Imports by Industry: Finance, Insurance and Real Estate (C$ millions)

	1988		1997		
	Revenue	Industry share (%)	Revenue	Industry share (%)	Annual average growth (%)
Finance, insurance & real estate	24,664		38,763		5.2
Finance & insurance	29,067	23.8	43,990	25.7	4.7
Chartered banks	3,581	10.2	4,058	6.8	1.4
Financial leasing	n/a	n/a	237	21.7	n/a
Other financial intermediaries	3,455	54.2	7,853	63.2	9.6
Other mortgage intermediaries	n/a	n/a	84	3.0	n/a
Life insurers	7,620	28.8	9,875	27.7	2.9
Property & casualty insurers	9,064	62.0	14,965	59.3	5.7
Insurance agents & brokers	348	11.4	637	8.1	6.9
Brokerage & other services	596	13.0	1,054	16.2	6.5
Real estate	1,681	8.0	2,586	11.9	4.9
Real estate operators	1,643	10.8	2,532	12.3	4.9
Real estate agents & brokers	38	0.7	54	5.2	4.0

Source: Appendix Table A3.

Insurance represented the largest component of total affiliate sales in financial services, with the sales of life and non-life insurance amounting to $9.9 billion and $15 billion, respectively, in 1997. The latter figure represented 59.2 percent of total sales of non-life insurance in Canada. This reflects the historic dominance of Canada's property and casualty insurance sector by branches or subsidiaries of foreign firms.

Foreign commercial presence in Canadian banking services was relatively weak, representing only 6.8 percent of total sales of banking services in Canada. The low level of foreign commercial presence in the Canadian banking sector is thought by many to reflect Canada's restrictions on foreign ownership in the banking sector. However, it is more likely to reflect the difficulties of expanding market share in a mature industry through internal growth. In point of fact, since the Canada-U.S. FTA, U.S. banks have not been subject to the limit imposed on the foreign bank share of Canadian banking-system assets.

When it comes to trade liberalization, there are few sectors that are more "sensitive" than financial services. This reflects a number of considerations. First, financial institutions serve the vital function of channelling savings into investments. A strong financial sector is generally thought to be essential to the health of the economy overall. Since the experience within national markets shows that financial services are subject to very powerful agglomeration pressures (e.g. within national economies, particular cities such as New York, London, Tokyo, Frankfurt and, in Canada, Toronto, become the seat for most financial institutions), trade liberalization in this sector raises numerous questions. Furthermore, the over-riding importance of prudential considerations in this sector have led regulatory authorities to require that sufficient capital and assets be maintained within national borders to protect local depositors and policyholders.

Trade performance is, however, also an important consideration in its own right. The above discussion suggests that Canada can hold its own in this field, at least in specific industry segments.

Finally, as regards real-estate services, these are not considered as tradable under the BOP concepts, but it is treated as tradable in the input-output account. Canada's exports and imports of real-estate services totalled $467 million and $215 million, respectively, in 1997.

Canada had a relatively high level of commercial presence in the U.S. real-estate market, amounting to $3.5 billion in 1998, representing 19 percent of total affiliate sales by foreign-owned firms in the United States. However, this represented a steep decline from $4.9 billion in 1989. Affiliate sales of real-estate services by foreign-owned firms in Canada were $2.6 billion in 1997, representing 11.9 percent of total sales of real-estate services in Canada. Between 1988 and 1997, sales of real-estate services by foreign-owned firms in Canada rose modestly at an annual rate of 3.1 percent.

Communications and broadcasting services

Communication and broadcasting services include broadcasting, telecommunications carriers, cable television, and postal and courier services. In 1997, Canada's two-way cross-border trade in this sector totalled $5 billion, with imports of $2.8 billion exceeding exports of $2.2 billion. As shown below, import growth also outpaced export growth over the reference period.

Table 13. Cross-Border Trade by Industry: Communications and Broadcasting Services (C$ millions)

	1986	1997	Annual average growth (%)	1986	1997	Annual average growth (%)
	Exports			Imports		
Total	949	2,169	7.8	889	2,804	11.0
Radio & TV broadcasting	20	71	12.2	46	370	20.9
Cable television	16	22	2.9	11	229	31.8
Telecommunications	716	1,430	6.5	732	1,642	7.6
Postal & courier services	197	646	11.4	100	563	17.0

Source: Appendix Table A1.

A few words are in order, however, about the meaning of some of these data. Cross-border trade statistics in telecommunications services are essentially a product of the "accounting rate system" that is used for calls that are placed in one market and terminate in a foreign market. As bilateral imbalances in international calling traffic occur, the carriers whose outbound calling minutes exceed inbound calling minutes make a net settlement payment to their foreign counterparts. Net settlement payments register as imports in the BOP, whereas net settlement receipts register as exports.[9]

Exports and imports of telecommunications carrier services grew annually by 6.5 percent and 7.6 percent, respectively, over the reference period. These increases mainly reflected the growing long-distance calling volume, as deregulation of communications services in Canada and abroad resulted in lower prices for long-distance calls.

The second most important subsector is postal and courier services. Trade in this subsector increased strongly over the reference period, with exports growing at an average annual rate of 11.3 percent and imports at 17 percent. Rising two-way trade in postal and courier services appears to reflect at least in part the expansion of e-commerce and the increased cross-border transactions of goods and services executed over the Internet. Canadian service providers would appear to be at a significant disadvantage vis-à-vis U.S. competitors, if for no other reason than geography. The major well-known U.S. parcel services have the advantage of locations that are central to North American traffic, whereas Canadian service will, by necessity, be delivered from a home base on the periphery.

Finally, and not very surprisingly, Canada is in a growing deficit position on international trade in radio and television broadcasting, including cable TV. Imports of broadcasting services rose at a robust annual rate of 20.9 percent and cable television services soared at a 31.8 percent rate; exports were modest both in level and growth.

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[9] U.S. International Trade Commission (2000) "Recent Trends in U.S. Services Trade," p. 19-1.

Mode 3 is the more interesting mode of international trade in communications and broadcasting. Affiliate transactions in communications services have become increasingly important due to the worldwide trend toward privatization of state-owned monopolies and easing of foreign-ownership restrictions of carriers. Statistics from the U.S. Department of Commerce show that sales of telecommunications and broadcasting services by affiliates of Canadian firms established in the United States totalled C$4.5 billion in 1998, accounting for 21.4 percent of total affiliate sales by foreign-owned firms in the U.S. market. This represented a massive increase from C$44.3 million in 1990 (indeed, the annual rate of growth was 67 percent).

With respect to affiliate sales of telecommunications services in Canada, the latest available statistics show that Canada's Mode 3 imports were $2.8 billion in 1994,[10] accounting for 15.3 percent of Canada's telecommunications carrier services market.

Sales of postal and courier services by foreign-based affiliates surged strongly to more than $1 billion in 1994 from $335.1 million in 1988, an increase of 200 percent.[11] Sales of postal and courier services by foreign-based affiliates accounted for 14.8 percent of total sales in Canada in 1994. Such sales are likely to continue to grow in response to growing e-commerce services in North America.

Motion picture, audio-video and other entertainment services

Despite concerns over the competitiveness of the Canadian cultural industry in facing the competitive pressure from the United States, Canada's trade performance in cultural and entertainment services was quite impressive over the reference period. In 1997, Canada's exports of motion picture, audio and video, as well as other entertainment services, including theatre, sports, gambling and other recreation activities topped $2.9 billion, compared to imports of similar services of $2.7 billion. Export growth (13.3 percent) also exceeded import growth (10.1 percent) over the reference period, allowing Canada to move from a deficit in these services in 1986 to a modest surplus in 1997. Rapid export growth of these services partly reflected the increasing numbers of audio-visual producers using Canada as a base for filming and producing.

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[10] 1994 figures are the latest data available for sales of telecommunications carriers by foreign-owned firms in Canada.

[11] 1994 figures are the latest data available for postal and courier services by foreign-owned firms in Canada

Table 14. Cross-Border Trade by Industry: Motion Picture, Audio-Video, and Other Entertainment Services (C$ millions)

Exports by subsector	1986	1997	Annual average growth (%)	1986	1997	Annual average growth (%)
	Exports			Imports		
Total	736	2,918	13.3	945	2,726	10.1
▪ Movies, audio & video	197	1,548	20.6	267	1,051	13.3
▪ Movies exhibition	2	5	8.7	1	4	13.4
▪ Theatre, sports & other rec.	537	1,350	8.7	677	1,657	8.5
▪ Lottery, bingo, casinos etc.	0	15	n/a	0	14	n/a

Source: Appendix Table A1.

While Canada performed well in cross-border trade in these industries, Mode 3 performance was even more striking. Affiliate sales of services related to motion pictures and sound recording by Canadian-owned firms in the United States totalled $5.6 billion in 1997, representing 39 percent of total affiliate sales by foreign-owned firms in the U.S. market. Canada and the United Kingdom were the largest foreign-owned suppliers of motion pictures to the U.S. market.

By contrast, foreign affiliate sales of entertainment, recreation and amusement services in Canada totalled $3.1 billion in 1997, accounting for 12 percent of the Canadian market. Affiliate sales by foreign-owned firms in Canada grew at an annual growth of 12.5 percent over the reference period.

Education and health services

Education services reported in this study include four components: private education services, non-profit education services, university education and "other" education services. With regard to health services, for imports, there is a breakdown between health practitioners and laboratories versus hospitals; exports, however, are not further broken down and, moreover, the data are muddied by the inclusion of some social services.

Suppliers of education and health services provide services to foreign customers mainly through Mode 2 (consumption abroad—e.g. studying abroad or travelling to a foreign country for a medical procedure not available at home) and Mode 3 (establishing affiliates in foreign markets).

Two-way trade in these areas is relatively modest, although growth was reasonably robust over the reference period.

Table 15. Cross-Border Trade by Industry: Education and Health (C$ millions)

	1986	1997	Annual average growth (%)	1986	1997	Annual average growth (%)
		Exports			Imports	
Total	292	780	9.3	447	1,055	8.1
Total education services	183	592	11.3	263	681	9.0
Private	24	100	13.9	31	129	13.8
Non-profit	0	107	n/a	0	90	n/a
University	83	240	10.1	131	274	6.9
Other	76	145	6	101	188	5.8
Health services	109	188	5.1	184	374	6.7
Health practitioners & labs	n/a	n/a	n/a	20	44	7.4
Hospitals	n/a	n/a	n/a	164	330	6.6

Source: Appendix Tables A1 and A2. Note: Exports of health services also include some social services.

In education services, study abroad predominates over other modes of service supply. This probably reflects the fact that the unique features of each country's education system—its culture, reputation and academic environments—cannot be easily replicated in another country.

In 1997, Canadian exports of education services totalled $592 million, having grown at an average annual rate of 11.3 percent from $183 million in 1986. Over the same period, spending by Canadians studying abroad, mostly in the United States, also increased substantially from $263 million to $681 million, an average annual increase of 8.1 percent.

Cross-border trade in health services was even smaller and also grew less rapidly over the reference period. In 1997, Canada exported $188 million of health-care services, up from $109 million in 1986. In the same year, Canadians purchased $374 million of similar services from abroad, resulting in a trade deficit of $124 million.

The pattern of Mode 3 trade is reversed for these subsectors, with education trailing health care by a considerable margin.

Table 16. Mode 3 Exports to the United States by Industry: Education and Health Services (C$ millions)

	1990	1996	Annual Average growth (%) 1990-1996
Education & health total	(D)	1,373	n/a
Education services	(D)	3	n/a
Health services	578.7	1,370	15.4

Source: Appendix Table A2.

With regard to Mode 3 exports, data suppression for confidentiality reasons limits the period of observation to 1990-1996. While affiliate sales of education services by Canadian-owned education institutions in the United States were insignificant, Canadian health-care service providers had a respectable $1.4 billion of sales through affiliates in the United States in 1996, substantially greater than cross-border trade in this industry segment. Moreover, there is an indication of rapid expansion of Canadian commercial presence in this area, as sales grew an average annual rate of over 15 percent. Foreign affiliate sales are expected to continue to expand as population aging in Canada and other industrialized countries boosts demand for health-care services. Pressure on domestic-supply capacity may make commercial presence of foreign-owned health-care firms increasingly attractive.

In Mode 3 imports, affiliate sales of education and health services by foreign-owned institutions in Canada were small, totalling only $99 million and $154 million in 1997 respectively (as noted above, the latter figure includes some social services). Growth was also relatively modest over this period.

Table 17. Mode 3 Imports by Industry: Education and Health Services (C$ millions)

	1988		1997		
	Revenue	Industry share (%)	Revenue	Industry share (%)	Annual average growth (%)
Education & health	125	n/a	253	n/a	8.1
Educational	54	9.9	99	6.4	7.0
Health and social	71	1.5	154	1.3	9.0

Source: Appendix Table A3.

Transportation services

We now turn to the sectors that are less intensive in the types of jobs that require advanced education, in particular, the transportation and travel-related sectors.[12]

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[12] It is important to note that *all* services sectors are knowledge- and skill-intensive; few members of the general public (including most of the accountants, bankers, computer programmers, educators and health professionals working in the "knowledge-intensive" sectors discussed above) possess the skills to be a good short-order cook, to manage a hotel, drive a tractor trailer or fly a commercial jet liner. That being said, to enter many jobs in the foregoing industries appears to require a higher base of formal, theoretical knowledge than is required to enter the industries that we are about to consider. Moreover, rightly or wrongly, society places a differential value in the form of higher rewards to the services provided in the so-called "knowledge-intensive" sectors. Bearing in mind these reservations about the distinction, the convention of labelling certain industries as "knowledge-intensive" and others as "less knowledge-intensive" is maintained.

With regard to transportation services, the relative importance of cross-border trade versus affiliate sales varies depending on the type of transportation service provided. Generally speaking, cross-border trade predominates in water- and air-transport services, while affiliate sales play a more important role in land-transport services and services that are incidental to transport.

As shown in the panel below, in 1997, two-way trade in transportation services, including air, water and land modes (but excluding transportation margins[13]) totalled $17 billion in 1997. Between 1986 and 1997, two-way trade in transportation services grew at an annual average rate of 9.7 percent, with export growth modestly outpacing import growth.

Table 18. Cross-Border Trade by Industry: Transportation* (C$ millions)

	1986	1997	Annual average growth (%)	1986	1997	Annual average growth (%)
		Exports			Imports	
Total	3,483	10,092	10.2	2,684	7,087	9.2
Air	1,132	2,460	7.3	1,302	3,337	8.9
Rail	228	307	2.7	229	284	2.0
Water	613	1,602	9.1	302	518	5.0
Truck	557	2,737	15.6	208	1,757	21.4
Pipeline	760	2,612	11.9	329	494	3.8
Other	193	374	6.2	303	653	7.2

Source: Appendix Table A1. * Total here excludes transportation margins; in the Appendix tables, transportation margins are included in the total. "Other" includes bus, taxi and other interurban and urban-transit services.

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[13] Transportation margins represent the portion of the export value of merchandise exports that reflects domestic transportation between the factory gate and the border. In the input-output accounts, transportation margins are broken out of the value of merchandise exports and are shown as exports of transportation services; however, there is no similar component in imports of transportation services. Accordingly, for purposes of analyzing the various transportation subsectors, we exclude transportation margins.

Air transport accounts for the largest share (a little over 40 percent in 1997) of two-way trade in transportation services. Canada ran a deficit in this sector, as imports of $3.3 billion exceeded exports of $2.5 billion in 1997. Moreover, this deficit expanded over the reference period, as growth of air-services imports exceeded that of exports. Given the extreme difficulties experienced by this industry in Canada and abroad since the attack on the World Trade Center and the Pentagon on September 11, 2001, the past is not likely to furnish an especially reliable guide to its future as regards services trade.

The fastest-growing transport mode during the reference period was trucking. This is an industry segment in which Canada has a trade surplus, with exports of $2.7 billion in 1997 substantially exceeding imports of $1.8 billion. However, import growth of 21.6 percent outpaced the robust growth of exports of 15.6 percent. The rapid growth of two-way trade in truck-transport services mirrored growing bilateral merchandise trade between Canada and the United States, which more than doubled since the Canada-U.S. Free Trade Agreement came into force. Truck-transport demand was also boosted by corporate restructuring in the 1980s and 1990s, which emphasized outsourcing and clustering of suppliers around large manufacturers to take advantage of "just-in-time" inventory systems.

Mode 3 trade in transportation services appears to be considerable. Canadian services suppliers exported transportation services through their affiliates established abroad worth $3.1 billion in 1998. This was in good measure due to Canada's strong presence in the U.S. rail-transport sector, where affiliates of Canadian firms rang up $2.6 billion in sales in 1998, accounting for 93.9 percent of total foreign affiliates sales in the United States in this sector.

Meanwhile, in terms of Mode 3 imports, Canadians purchased $7.4 billion of transportation and storage services from affiliates of foreign-owned firms established in Canada in 1997. Most of this growth may be inferred to have come from truck transport, although unfortunately these data are not broken out of the total.

Table 19. Mode 3 Exports to the United States by Industry: Transportation and Warehousing (C$ millions)

	1993	1998	Growth 1993-1998
Total	1,704	3,092	12.7
Air	n/a	0	N/A
Rail	n/a	2,633	N/A
Water	n/a	113	N/A
Truck	n/a	219	N/A
Support activities for transportation	n/a	128	N/A

Source: Appendix Table A2.

Table 20. Mode 3 Imports by Industry: Transportation and warehousing (C$ millions)

	1988		1997		
	Revenue	Industry share (%)	Revenue	Industry share (%)	Annual average growth (%)
Transportation & storage	1,248	4.4	7,383	17.1	21.8
Air transport	195	2.4	627	4.6	13.9
Water transport	229	6.6	679	13.0	12.8
Urban transit & others	n/a	n/a	335	9.4	n/a
Oil & gas pipeline	234	4.9	184	1.6	-2.6
Other	590	n/a	5,558	n/a	28.3

Source: Appendix Table A3.

Insofar as sectoral data are available, perhaps the most interesting transport-industry segment is air-transport services. Liberalization of the Canadian airline industry through a series of bilateral agreements significantly boosted the sales of air-transport services by foreign-owned firms in Canada over the reference period. Since 1988, sales of air-transport services by affiliates of foreign-owned firms in Canada tripled to reach $627 million in 1997 from $195 million in 1988. Correspondingly, the share of sales by foreign-owned firms in the Canadian air-transport industry rose to 4.6 percent in 1997 from 2.4 percent in 1988.[14] However, as noted, recent events call into question the information value of these past developments.

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[14] For a detailed analysis on this issue, see Sangita Dubey and François Gendron "The U.S.-Canada Open Skies Agreement: Three Years Later," Statistics Canada, Catalogue No. 87-003-XIB, 1999.

Travel-related services

For analytical purposes, we group several categories of services of what might be considered travel-related services. The major categories are accommodation, and food and beverage services, both of which are major line items in the input-output accounts. As well, we break out of the "household and personal services" category, the major component of auto and machinery leasing, relegating the remaining small items to the miscellaneous category. We also pull out of the input-output "other services" category two distinctly travel-related subcategories: travel services, and parking and other services.

These services are traded through Mode 2, when customers travel abroad to obtain these services. These industries feature many jobs that are low-paid and low-skilled. However, one distinguishing feature of these services jobs is that they do not face direct-wage competition from low-wage countries as in goods trade, because services industries are not as footloose as many of their low-skilled counterparts in the manufacturing sector.

Table 21. Cross-Border Trade by Industry: Travel-related Services (C$ millions)

	1986	1997	Annual average growth (%)	1986	1997	Annual average growth (%)
	Exports			Imports		
Total	3,404	6,780	6.5	3,840	9,560	8.6
Accommodation	1,659	2,622	4.2	2,255	5,196	7.9
Food & beverage	1,189	2,914	8.5	1,067	2,904	9.5
Auto & machine leasing	226	336	3.7	199	359	5.5
Travel services	124	337	9.5	28	71	8.8
Parking & other services	206	571	9.7	291	1,030	12.2

Source: Appendix Table A1.

Canada's balance on trade in travel-related services deteriorated over the reference period, falling from near balance in 1986 to a sizeable deficit in 1997. This reflects, for the most part, deterioration in the balance on accommodation services. In 1997, Canada's exports of accommodation services totalled $2.6 billion, only half as much as the $5.2 billion that Canadians imported. By contrast, in 1986, imports and exports in this category were in near balance. This is a curious development, since there was no similar deterioration in the food and beverage sector.

One may speculate that the divergence between sales of accommodation services, and food and beverage services, reflects a terms of trade shift against Canada. This could be explained by the deterioration in Canada's exchange rate over the reference period: food, as a traded commodity, would have experienced compensating price increases; on the other hand, hotel accommodation, which is not traded, might not have experienced a similar offsetting price increase. In the context of price-inelastic demand for travel services, the observed divergence would make sense. This issue bears some study.

There is limited information available on Canada's Mode 3 exports to the United States. There is a small Canadian commercial presence in the hotel sector.

Table 22. Mode 3 Exports to the United States by Industry: Travel-related Services (C$ millions)

	1989	1998	Growth
Travel-related services total	(D)	(D)	n/a
Hotels & other lodging places	123	257	8.5
Food & beverage	(D)	(D)	n/a
Equipment rental & leasing	(D)	212	n/a
Travel arrangement & reservation services	n/a	21	n/a

Source: Appendix Table A2.

Mode 3 imports are significant in the travel-related services with an extensive foreign commercial presence in all the major industry segments and robust growth, especially in auto rentals.

Table 23. Mode 3 Imports by Industry: Travel-related services (C$ millions)

	1988		1997		
	Revenue	Industry share (%)	Revenue	Industry share (%)	Annual average growth (%)
Travel-related services	3,370	n/a	7,926	n/a	10.0
Accommodation	492	8.7	1,011	12.4	8.3
Food & beverage	1,589	9.8	3,472	14.5	9.1
Auto renting & leasing	758	29.5	2,672	40.5	15.0
Other consumer services	531	15.7	771	16.6	4.2

Source: Appendix Table A3.

Distribution

In the BOP accounts, wholesale and retail trade services are not considered to be tradable; transactions in these sectors are considered to take place between residents, not between residents and non-residents. The input-output accounts attribute quite a substantial value to cross-border trade in these sectors, however. This is due to a technical adjustment similar to that which generates a large value for transportation margins in that sector. In this case, Statistics Canada allocates to the wholesale and retail sale services, that portion of the value of merchandise trade that represents these sectors' share of the difference between factory-gate and at-the-border valuation. While these adjustments are important in terms of understanding the role that producer services play in supporting merchandise sector activity, they are not relevant to a discussion of the gains from, or impact of, trade liberalization.[15]

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[15] For the record, with the adjustments, trade in wholesale services turns out to be one of Canada's largest services exports at $10 billion in 1997. This was significantly higher than imports of $2.4 billion recorded in the same year. As in the case of transportation margins, the difference in the basis of valuation of exports and imports does not make a direct comparison of these figures meaningful. The growth in trade in these sectors reflected the rapid growth of merchandise trade during the reference period. Canada's trade in retail services was much smaller. In 1997, Canada exported $680 million of retail services and imported $456 million from the world.

Mode 3 trade is more meaningful in the distribution sector. Canada's commercial presence in the U.S. wholesale and retail market appears to be very weak and indeed in decline.

Table 24. Mode 3 Exports to the United States by Industry: Distribution Services (C$ millions)

	1989	1997	Annual average growth (%)
Distribution	491	176	-12.1
Wholesale trade	199	151	-3.4
Retail trade	292	24	-26.8

Source: Appendix A2.

This may be partly due to a lack of major Canadian-owned manufacturers of consumer durable goods (wholesaling affiliates are often owned by manufacturers to serve as their representatives in foreign markets). In retail trade, the issue may be a lack of major Canadian-owned retail chains in the United States.

Mode 3 imports are another story altogether. Affiliate sales of wholesale services by foreign-owned firms in Canada were $58.9 billion in 1997; this was, by far, the largest foreign affiliate sales total among major industrial categories.

Table 25. Mode 3 Imports by Industry: Distribution Services (C$ millions)

	1988		1997		
	Revenue	Industry share (%)	Revenue	Industry share (%)	Annual average growth (%)
Distribution	43,864	n/a	81,556	n/a	7.1
Wholesale trade	26,590	20.3	58,875	32.8	9.2
Retail trade	17,274	13.0	22,681	13.1	3.1

Source: Appendix A3.

Despite the entry of several high-profile U.S. retail chain stores such as Wal-Mart and Price Costco into Canada in the 1990s, Mode 3 imports in Canada's retailing market remained relatively stable over the reference period at about 13 percent of the industry total. In the wholesale sector, however, Mode 3 imports expanded from 20 percent of the industry in 1988 to about 33 percent in 1997, despite the lack of fanfare.

A summary of industry trends

In summary, Canada's services trade expanded rapidly in both cross-border trade and commercial presence in recent years. Services that are complementary to merchandise trade, and that are associated with ongoing social, economic and technological changes, involving production and distribution of knowledge-intensive products, registered faster than average growth in both cross-border trade and affiliate sales. Transportation and wholesale services that support merchandise trade registered robust growth in recent years. The expansion of these services mirrored the surge of merchandise trade in North America since the implementation of the FTA and the NAFTA; other factors contributing to this trend include increased fragmentation of production across borders in conjunction with corporate restructuring that resulted in outsourcing of specialized production.

This review shows that, despite Canada's overall apparent deficit position in services trade, Canadian suppliers have been doing very well in what might be called the "professional" services sectors, such as business services. On the other hand, Canada's traditional weakness in the services sector is clearly seen to lie in what might be termed the "industrial" services—for example, transportation and distribution—although there are, of course, exceptions to this broad generalization (Canada does well in Mode 3 exports of rail services to the United States and conversely cross-border imports of broadcast services dominate Canada's export performance in this sector).

We now turn to a consideration of the implications of this analysis in terms of gains from trade in the Doha Round of multilateral trade negotiations, given what is known about trade barriers in the various sectors across trading partners. In approaching this issue, we pay particular attention to the issue of job quality and how that might be affected by trade liberalization.

Based on the above evidence, the prior expectation would be that trade liberalization would be consistent with promoting knowledge-intensive services sector's growth in Canada. This reflects, in particular, the rapid two-way growth of professional services; this indicates that firm-level specialization drives trade rather than broader economic forces of comparative advantage. Moreover, there is a strong record of provision of these services on a cross-border basis, which is also of interest in terms of stimulating employment growth domestically.

Implications of further liberalization of services trade

Trade intensity by sector

In considering the economic implications of services trade liberalization, it is useful to put the preceding discussion of industry trends into perspective by comparing the level of exports and imports in the various sectors, by the different modes, to the level of GDP in these sectors. This provides a sense of the significance of trade for the various sectors.

Table 26 reports the export share of GDP by industry.[16] As can be seen, services overall are far less traded than most goods. Services exports represented just 11.8 percent of services production in 1997 compared with a figure of 99.2 percent for merchandise exports.[17] This reflects the fact that a large number of Canada's private commercial services remain almost completely outside of the global trading system. For instance, cross-border exports of construction and retail trade, as well as personal and household services, represent only minuscule shares of their sectoral GDP. The socially sensitive sectors of education and health also had minuscule trade exposure.

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[16] Table 26 reports domestic exports of services only. If re-exports of $17.9 billion are included, Canada's total services exports in 1997 were $342.1 billion.

[17] Note that the value of exports in a sector can exceed the value of the sector's GDP. This reflects the fact that GDP measures value-added in Canada, while the total value of exports includes intermediate inputs, including those imported from abroad.

Moreover, some services are non-commercial in nature, for instance, governmental services, membership organizations and some social services, which are mainly carried out within national boundaries. Typically, these non-commercial services are neither tradable on a cross-border basis nor attractive commercially in terms of establishing affiliates abroad. In 1998, total output of these non-tradable services combined, plus owner occupied housing, represented 15 percent of Canada's GDP. This means that, while services production accounted for 65.3 percent of GDP in 1998, only 50 percent was potentially tradable.

As can be seen, some services industries are far more trade-dependent than others. For example, in professional services, exports represented 38.4 percent of the subsector's GDP. Other services that had a relatively high export share of sectoral GDP include transportation, travel-related services such as accommodation, amusement and recreation, as well as insurance, and services supplementary to merchandise trade such as transportation and wholesales services.

It is also of interest to examine the trade exposure of the various sectors in terms of the role of imports. This is provided in Table 27. Overall, the trade exposure has a similar structure of trade dependence in Table 26. Professional services, insurance, amusement and recreation, and transportation, as well as accommodation and food, have a high level of trade exposure to foreign imports, while retail trade, personal and household services, and health and education have less exposure to foreign competition.

There are some subsectors that depend more on foreign markets while facing less competitive pressure from imports. The trade-dependence ratio for wholesale trade was 24.5% in 1997, but the trade-exposure ratio was only 5.5%. This suggests that traders use more Canadian wholesale services than counterparts in foreign countries.

Table 26: Trade Dependence of Canadian Service Industries: Exports, 1997 (C$ millions)

	GDP	Sector share (%)	Domestic exports	Mode 3 exports to the U.S.	Domestic exports/ GDP (%)
Business services	41,576	5.5	9,737	n/a	23.4
Professional services	18,565	2.4	7,123	883	38.4
Advertising	2,078	0.3	252	29	12.1
Other business services	20,932	2.8	2,362	n/a	11.3
Finance ins. & real est.	69,913	9.2	6,710	16,822	9.6
Finance & real estate	58,590	7.7	3,653	4,784	6.2
Insurance	11,323	1.5	3,057	12,037	27.0
Communications	22,755	3.0	2,169	4,489(2)	9.5
Amusement & recreation	8,286	1.1	2,918	(D)	35.2
Education & health	92,985	12.2	780	(D)	0.8
Education	41,798	5.5	592	3	1.4
Health & social services	51,187	6.7	188	1,370(1)	0.4
Transport & storage*	34,661	4.6	10,633	5,862	30.7
Transportation	29,903	3.9	7,480	(D)	25.0
Travel-related services	n/a	n/a	n/a	n/a	n/a
Accommodation & food	19,494	2.6	5,536	(D)	28.4
Distribution	84,931	11.1	11,240	252	13.2
Wholesale trade	43,150	5.7	10,560	151	24.5
Retail trade	41,781	5.5	680	101	1.6
Miscellaneous	68,845	9.0	2,454	n/a	3.6
Total services**	443,446	58.2	52,177	48,543	11.8
Memo					
Total merchandise	264,269	34.7	262,277	n/a	99.2
Manufacturing	144,293	18.9	223,773	n/a	155.1
All industries	761,853	100.0	324,189	n/a	42.6

Sources: Statistics Canada's input-output table, CANSAM matrix 4765 and 4766. "U.S. International Services: Cross-Border Trade and Sales Through Affiliates," published by The U.S. Department of Commerce, the Bureau of Economic Analysis

Note: Statistics on the performance of U.S. affiliates of Canadian firms in non-service industries are available, but they are collected in different surveys. Therefore, they are reported in this table.

* Excluding transportation margins; **Excluding owner-occupied housing and transportation margins; *** Non-tradable services include governmental services and membership organizations. (1) Supplemented by 1996 figures. (2) Supplemented by 1998 figures.

Table 27: Import Share of Canadian Service Industries: 1997 (C$ millions)

	GDP	Sector share (%)	Imports	Mode 3 imports	Domestic imports/ GDP (%)
Business services	41,576	5.5	9,759	8,511	23.5
Professional services	18,565	2.4	6,240	(D)	33.6
Advertising	2,078	0.3	489	(D)	23.5
Other business services	20,932	2.8	3,030	(D)	14.5
Finance, ins. & real estate	69,913	9.2	8,525	46,576	12.2
Finance & real estate	58,590	7.7	4,154	n/a	7.1
Insurance	11,323	1.5	4,371	n/a	38.6
Communications	22,755	3.0	2,804	8,650(1)	12.3
Amusement & recreation	8,286	1.1	2,726	3,089	32.9
Education & health	92,985	12.2	1,055	253	1.1
Education	41,798	5.5	681	99	1.6
Health & social services	51,187	6.7	374	154	0.7
Transportation*	29,903	3.9	7,087	7,383	23.7
Travel-related services	n/a	n/a	9,560	7,155	n/a
Accommodation & food	19,494	2.6	8,100	4,483	41.6
Distribution	84,931	11.1	2,838	81,556	3.3
Wholesale trade	43,150	5.7	2,382	58,875	5.5
Retail trade	41,781	5.5	456	22,681	1.1
Miscellaneous	68,845	9.0	1,247	1,048	1.8
Total services**	443,446	58.2	45,601	126,666	10.3
Memo					
Total merchandise	264,269	34.7	280,869	137,304	106.3
Manufacturing	144,293	18.9	263,336	111,987	182.5
All industries	761,853	100.0	326,470	518,922	42.9

Sources: Statistics Canada's input-output table, 1997, and survey of industrial organizations and finance.

Note: (1) includes utilities; (2) includes fishing; (3) includes forestry only.

: * Excluding transportation margins.

**Excluding owner-occupied housing and transportation margins.

Trade in services is limited by various barriers and impediments. Even in industrialized countries that have relatively liberal merchandise trade regimes, barriers to trade in services and movements of natural persons can be particularly restrictive. These barriers have severely limited services trade. Indeed, estimates suggest that interprovincial trade in services is between 30 and 40 times more intense than that between provinces and states.[18]

In recent years, significant progress has been made in the measurement of the size of barriers to services trade.[19] The latest estimates show that, overall, Canada is relatively open in environmental services, value-added telecommunications, rental services, maritime transportation and computer services, while it is restrictive in postal services, basic telecommunications, audio-visual services, some professional services and education.[20] These estimates reflect Canada's existing domestic regulatory regimes and, to a certain extent, the competitiveness of each service sector in the global market

Finally, natural barriers such as language, culture and differing legal systems appear to be a more formidable challenge to service suppliers than to suppliers of merchandise. Engineers would find it extremely difficult to market their skills to a foreign customer, if they do not know their customer's language. A service supplier would hesitate to establish a permanent presence in a host country in which the language, culture and legal systems depart drastically from those in the home country.

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[18] John F. Helliwell, *How Much Do National Borders Matter?* (Washington, D.C.: Brookings Institution Press, 1998).

[19] For a detailed review of the literature on measuring the barriers to trade in services, see Zhiqi Chen and Lawrence Schembri, "Measuring the Barriers to Trade in Services: Literature and Methodologies," in this volume.

[20] Pacific Economic Cooperation Council (PECC) 1995, Survey of Impediments to Trade and Investment in the APEC Region, Singapore: PECC.

From the above analysis, it can be seen that plenty of scope remains for exports of services to increase over time, to the extent that regulatory and other trade barriers are relaxed. A recent study indicates that an assumed 33 percent reduction of services barriers could increase world services exports by US$118.6 billion, with US$35.5 billion for the United States and US$6.6 billion for Canada.[21]

The economic impact of the structural shift toward a knowledge-based services economy

From the preceding discussion, the scope for gains in trade seem best in two areas: consumer services and producer services (including both professional and industrial). Prospects are least in the social services and in certain services that, for the most part, can be treated as "non-traded." How is Canada positioned to benefit from liberalization in these areas?

Sectoral considerations

Table 28 documents the sizeable shift toward spending on services in Canadian household expenditures in recent years. While household expenditures on goods increased by a total of 6 percent in real terms between 1986 and 1996, spending on services rose by a total of 34 percent over the same period. As a result, the share of services in total Canadian household expenditures increased to 41.0 percent in 1996 from 35.6 percent in 1986.

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[21] Drusilla K. Brown, Alan V. Deardorff and Robert M. Stern (2001) "CGE modeling and analysis of multilateral and regional negotiating options," Discussion Paper No. 468, The University of Michigan.

Table 28. Household Expenditures on Services and Goods, 1986 and 1996

	Services	Goods	Total
Levels			
Expenditures in 1986 ($ billions)	103.9	187.9	291.8
Expenditures in 1996 ($ billions)	138.8	199.4	338.2
Growth			
Percentage change 1986-1996 (%)	33.6	6.1	15.9
Shares			
Shares of household expenditure 1986 (%)	35.6	64.4	100.0
Shares of household expenditure 1996 (%)	41.0	59.0	100.0

Source: Statistics Canada, *Services Indicators*, 2nd Quarter 1998.

As household expenditures on services increased, the share of expenditures going to the various services sectors changed, as shown in Table 29. Not surprisingly, the services sectors that commanded a rising share of household spending such as communications, recreation and financial services, also enjoyed higher output and employment growth.

Table 29. Canadian Household Expenditures on Various Services, 1996

	Expenditures in 1996 (billion of dollars)	Percentage change over the period 1986-1996
Financial services	52.3	34.0
Food & beverages	18.6	7.0
Communications	12.0	72.0
Amusement & recreation	8.5	47.0
Personal & household	6.1	29.0
Traveller accommodation	3.9	27.0
Others	37.4	39.0

Source: Statistics Canada, *Services Indicators*, 2nd Quarter 1998.

These changes in expenditure patterns were the result of a number of factors, including not only the differential impact of growing per-capita incomes on different types of services, but also of demographic trends and product innovation in many services industries

Perhaps the most general factor underpinning the rise in the share of services in household expenditures is the operation of what is known as Engel's Law. This articulates the well-known empirical regularity that, as a given household becomes better off, it spends a smaller proportion of its budget on necessities such as food and a larger proportion on luxuries such as recreational goods and services. This means that, as consumers grow more prosperous, we would expect their demand for many types of services to grow faster than their demand for goods.

The data in Table 29 provide evidence supporting this hypothesis. For example, between 1986 and 1996, Canadian household spending on amusement and recreation services increased by 47 percent. These non-essential services account for a low share of household expenditures at low per-capita incomes, but demand increases dramatically as consumers become more prosperous.[22]

Similarly, the rise in spending on communications services (a gain of 72 percent over the period) and on financial services (a gain of 34 percent) also undoubtedly reflected an Engel's Law effect, although technological advances, which expanded the range of communications services, and product innovation and regulatory changes, which expanded the range of financial services that is available on the market, as well as relative price declines in these sectors, also undoubtedly played important roles.

On the other hand, there was comparatively little change in the consumption of personal and household services.

Demographic changes clearly have a profound impact on consumer-spending patterns. The dominant demographic fact in Canada and many other industrialized countries over the past several decades and prospectively in the coming few decades has been the relative decline of the population in the younger age brackets and the rise of the age group of 40 and 40-plus in the total population. Four fundamental forces have been mainly responsible for this trend:

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[22] Note: This simple analysis ignores the role of relative price changes, demographic composition of households, the changing mix of goods and services available on the market, and other factors that might affect the relative share of expenditures.

- First is the increase in life expectancy, which, for the average Canadian, increased to 79 in 1997 from 71 in the early 1960s.
- Second is the emergence of the baby-boom generation after World War II, and the ensuing "baby bust." This demographic phenomenon is mirrored in the drop in the fertility rate from 3.8 per woman in 1960 to less than 2 per woman since the 1970s. Given the predictability of the aging process and the evolving patterns of consumer behaviour with age, it is possible to anticipate the social and economic impact of population aging on the output and employment structure of the economy. For example, the life-cycle theory of savings asserts that the objective of a consumer's consumption-saving decision is to smooth consumption over time, so as to maximize his or her overall lifetime utility. At a young and family-building age, an investor spends most of his or her limited savings on a house. As an investor grows older and has acquired sufficient housing, the priority turns to addressing the uncertainty of remaining lifetime income. This generates a stronger need to invest for retirement. The rapid growth of financial asset markets in North America in recent years thus partly reflects this underlying demographic change, as the baby-boom generation moved into the retirement-savings age brackets. Meanwhile, the continued increase in the fraction of those 65 and older has led to rising demand for health and leisure services.
- Third, the advances in information technology have created many entirely new services industries such as the Internet and the various on-line services now available, cellular telephony, and a host of other new services. The growth of these services bears a striking resemblance to some of the dynamic manufacturing industries that emerged in the past half century. They are to be distinguished from other traditional industries by high investment in R&D and a high concentration of skilled labourers, contributing new dimensions to the growing services sector in the economy.

- Fourth, the rising demand for services has encouraged capital and labour to be allocated toward services, as was documented above.

The labour market implications of the structural shift toward a knowledge-based services economy

The evolution of the economy from a resource- and manufacturing-dominated economy toward a knowledge-based services economy has led to many changes in Canada's labour market.

One distinguishing feature of the structural shift toward services is the boost that it has given to the importance of education. Over the course of the 20th century, the average level of education of the Canadian working-age population increased sharply. Many more Canadians than ever before are enrolling in post-secondary institutions, resulting in a rising proportion of workers with some college or university education. Figure 1 shows the rise in share of employment in Canada accounted for by those with some post-secondary training.[23]

Coupled with evidence from unemployment rates (those with higher education have lower unemployment rates),[24] this indicates that those who acquired the necessary education and training were rewarded in the labour market, while those who lacked that preparation had a harder time finding or keeping a job. For instance, between 1989 and 1995, the number of employed persons without any post-secondary training declined by 0.5 percent. By contrast, the number of employees with some post-secondary training, up to and including a bachelor's degree, went up by 31.3 percent, and those with some graduate training or post-graduate degrees, had the largest gain, 33 percent. The rise in employment of workers with post-secondary training was substantially larger than their share of the working-age population.

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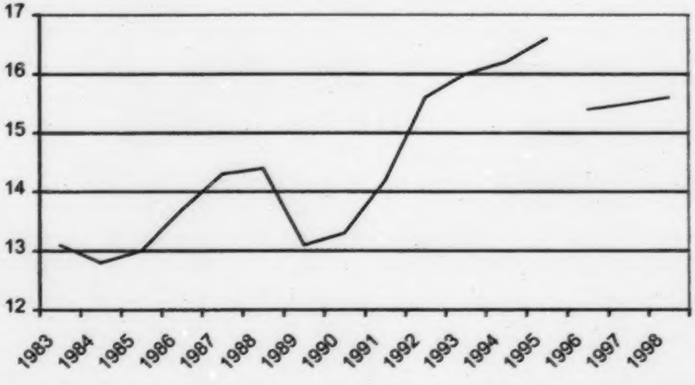
[23] The broken line in Figure 2 is due to the change in the educational classification. Starting in 1996, Statistics Canada's *Survey of Labour and Income Dynamic* included a new category for respondents who "don't know" what their educational attainment is. Since these had previously been allocated across the various categories, there is a decline for all the categories, including those with higher education under the new classification system.

[24] See Statistics Canada, *Labour Force Update*, Catalogue no. 71-005-XPB, Table 9, Number Unemployment Rate by Age Group, Sex, Education and Province, 1998.

Figure 1. The share of employeeswith post-secondary training in total Canadian employment (%)



Insofar as higher education indicates a higher level of skill, one common explanation for the disproportionate increase in the share of employment accounted for by workers with post-secondary training is "skill-biased technological change"—technological change that expands demand for high-skilled workers more rapidly than for low-skilled workers. Within a given industry, this effect would lead to a secular rise in the number of employees with post-secondary training relative to those without. In addition, sectors that use skills and knowledge most intensively expanded more rapidly than less-skill-intensive industries. This too contributed to the rapid increase of employment of knowledge workers in the Canadian economy.

Also contributing to the rising share of highly educated workers was the emergence in recent decades of new industries enabled by innovation in information technology. The extensive use of information and communications technologies in these new industries placed a high premium on educational attainment of workers, since the development of new products and processes in these sectors were strongly dependent on the skills, expertise and experience embodied in their employees.

Services played an important role in this context. Table 30 shows the share of employment by industry group accounted for by those with some post-secondary training. As can be seen, the services sector had the highest relative share of highly educated workers of any sector in Canada in 1998 and also registered the largest gain in this respect between 1983 and 1998.

Reflecting their rising share of economic output and relatively high knowledge-intensity, the services industries employed more than 80 percent of those who had some post-secondary training up to and including a bachelor's degree and nearly 90 percent of those who advanced to graduate studies. Between 1989 and 1995, Canadian services industries created 709,000 jobs; of these, only 144,000 went to those who lacked post-secondary training, compared to 381,000 for those with some undergraduate training, and 184,000 for those with some graduate training.

Table 30. Share of Employees with Post-secondary Training in Total Employment, by Major Sector (percent)

	1983	1995	1996	1998
Total economy	13.1	16.6	15.4	15.6
Agriculture	3.7	6.9	6.5	7.1
Mining	14.0	10.5	12.3	13.0
Manufacturing	7.5	9.8	9.5	8.6
Construction	4.1	5.5	4.9	5.2
Utility	16.1	15.7	18.1	17.2
Services	15.8	19.7	19.8	19.7

Sources: Statistics Canada, *Survey of Labour and Income Dynamics 1996-1998* and *Survey of Consumer Finance 1983-1995*.

Table 31 presents a sectoral breakdown of Canada's services sector.

Table 31. Share of Employment accounted for by those with Post-secondary Training in Services, 1983-1998 (percent)

	1983	1995	1996	1998
Total services	15.8	19.7	19.8	19.7
Transportation & storage	5.2	6.3	4.3	5.6
Communications	13.8	16.9	15.3	14.6
Wholesale trade	8.9	12.5	11.9	12.8
Retail trade	5.6	7.6	7.5	8.1
Finance & insurance	11.7	22.7	21.2	20.4
Deposit-accepting intermediary industries	8.5	19.8	15.6	17.8
Insurance	14.9	21.5	23.2	15.2
Other financial intermediary	15.6	34.0	46.2	39.5
Real estate	13.0	17.5	17.6	16.9
Business services	28.7	35.7	35.8	32.1
Computer services	29.6	50.0	41.7	36.6
Accounting services	44.7	41.0	48.1	38.8
Advertising services	9.8	19.5	37.2	30.4
Arch., eng. & other sci. & tech.	32.1	47.0	39.2	39.9
Legal services	44.2	43.8	39.7	41.2
Management consulting	N/A	54.2	50.0	48.6
Other business services	12.0	15.1	19.2	14.8
Government services	20.7	24.7	23.2	23.5
Educational services	53.6	57.1	57.6	57.5
Health & social services	19.1	23.1	22.6	23.1
Accommodation, food & beverage	4.2	5.6	5.6	5.4
Accommodation	5.5	6.8	N/A	9.5
Food & beverage	3.6	5.4	5.6	4.3
Other services	8.7	10.7	11.0	12.0
Amusement & recreation	10.5	12.5	14.3	15.3
Personal & household	2.7	3.4	N/A	N/A
Membership organization	27.8	29.8	28.6	29.5
Other services	6.1	10.1	10.0	9.9

Sources: Statistics Canada, *Survey of Labour and Income Dynamics 1996-1998;* and *Survey of Consumer Finance 1983-1995.*

Not surprisingly, a high proportion of employees in the management consulting, education services, and the computer and engineering services industries has post-secondary training. The rising demand for business information and the widespread use of information technology also explains the high share of employment accounted for by highly educated workers in financial and advertising services. On the other hand, there was comparatively low demand for highly educated workers in retail trade, personal and household services, and accommodation, as well as in the transportation and storage, and food and beverage services. The latter two were among the industries with the lowest demand for highly educated workers.

Relative to services, manufacturing has low demand for highly educated workers, although some individual sectors such as the electrical and electronic-products industry, and the chemical-products industries had high concentrations of highly skilled workers. The rubber products, primary textiles, and clothing industries were among the Canadian industries with the lowest demand for highly educated workers.

Similar trends are to be seen in terms of earnings. In the past decade, those who acquired the education and training that employers sought were rewarded with higher earnings, while those who lacked that preparation saw their earnings lag behind. Table 32 shows that, in 1998, the average earnings of a full-time worker with some post-secondary training, up to and including a bachelor's degree, were 70 percent higher than those of a high school graduate or a dropout. A full-time worker with some graduate training earned almost *two and half times* as much as the non-degree holder.

Figure 2 shows a clear positive correlation between workers' educational attainment and average annual earnings across industries, although there are some notable exceptions. For example, the share of employment accounted for by highly educated workers in "other financial intermediary services" was not among the highest, but average annual earnings topped $80,025 in 1998. By the same token, the share of highly educated workers was highest of all industries in education services, but average annual earnings were only $34,992.

Table 32. Average Annual Earnings of Canadian Workers 1989-1998 (in constant 1998 dollars)

	No post-secondary degree (1)	Bachelor's degree (2)	Graduate degree (3)	Total	Earnings premium (3/1)
1989	24,676	41,991	57,619	27,586	2.34
1990	24,743	39,882	54,626	27,352	2.21
1991	23,671	40,374	58,008	26,814	2.45
1992	23,793	39,954	54,470	27,022	2.29
1993	23,613	37,820	51,440	26,587	2.18
1994	24,329	39,231	54,249	27,476	2.23
1995	24,162	38,040	52,629	27,244	2.18
1996	23,998	39,345	52,696	27,107	2.20
1997	24,258	40,326	54,551	27,550	2.25
1998	24,848	42,361	60,635	28,557	2.44
Percentage change 1989-1998	0.70	0.88	5.23	3.52	

Source: Statistics Canada, *Survey of Labour and Income Dynamics 1996-1998.*

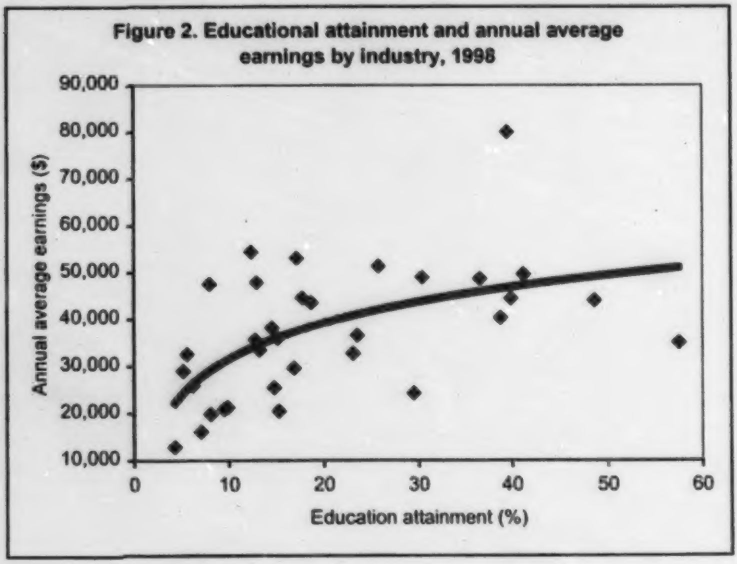


Figure 2. Educational attainment and annual average earnings by industry, 1998

Despite these apparent anomalies, overall, a one-percentage increase in the share of highly educated workers was associated with a 0.29 percent increase in average annual earnings across industries. The concave shape illustrated in Figure 2 suggests diminishing relative returns to education. Holding all other factors constant, the relative rewards to education increased at a diminishing rate; in other words, an additional unit of education were worth less and less in financial terms the higher up the educational attainment ladder a worker climbed.

Table 33 shows that services contain some of the best-paid jobs in Canada. Highly educated workers earned extremely high average wages and salaries in the "other financial intermediary" ($96,605), advertising ($95,299), and deposit intermediary ($88,804) industries. The highest average wages outside services were in the mining and oil well industry, where highly qualified persons earned $81,630 a year.

It is surprising to see that, despite many success stories in Canada's high-tech industries, the average wages in the computer software and engineering services have not matched those in financial, advertising and legal services. The annual average earnings for highly educated workers in computer software and engineering services were $57,120 and $54,233, respectively, in 1998, compared to annual earnings of $96,605 for similar persons in the "other financial intermediary" industry.

Earnings in the overall services sector vary widely. Not every service industry is able to offer such well-paid jobs as do the financial and computer software services industries. The lowest-paid workers in some service industries earned less than the lowest-paid workers in industries outside of services. For example, a low-educated worker in personal and household services earned $11,852 a year, compared to $14,469 a year for a similar person in agriculture. Other low-earning service industries included amusement and recreation, food and beverage, accommodation, and retail trade.

Table 33. Average Annual Earnings of Canadian Workers with and without Post-secondary Education by Industry in 1998

	Secondary education or less	Post-secondary education	Overall
Agriculture	14,469	34,996	16,075
Mining, quarrying & oil wells	42,764	81,630	47,872
Manufacturing	35,493	63,378	37,793
Construction	28,890	32,313	29,000
Transportation and storage	31,899	44,974	32,559
Communications	35,271	56,239	38,266
Utility	48,920	73,641	53,101
Wholesale trade	32,112	56,080	35,650
Retail trade	18,926	31,940	19,890
Finance and insurance	35,724	84,421	46,005
Deposit-accepting intermediary	34,312	88,804	44,583
Insurance	31,453	54,174	35,980
Other financial intermediary	71,280	96,605	80,025
Real estate	25,371	48,475	29,668
Business services	30,358	59,750	40,254
Computer services	42,532	57,140	48,663
Accounting & bookkeeping	25,141	61,680	40,351
Advertising services	29,538	95,299	49,032
Arch., eng. & other sci. & tech.	36,358	54,223	44,438
Offices of lawyers & notaries	31,841	74,304	49,531
Government services	32,097	49,821	36,629
Educational services	24,635	41,991	34,992
Health & social services	26,552	52,909	32,742
Accommodation services	17,260	56,976	20,842
Food & beverage services	12,153	24,554	12,844
Other services	17,201	27,934	18,720
Amusement & recreation	17,733	29,992	20,436
Personal and household services	11,852	n/a	11,715
Membership organizations	20,961	31,632	24,366
Other services	20,636	27,247	21,374
Total	24,848	48,077	28,557

Sources: Statistics Canada, *Survey of Labour and Income Dynamics 1996-1998*: and *Survey of Consumer Finance 1983-1995*.

Contrary to the experience in the United States and other industrialized countries, where a sharp increase in the earnings premium was commanded by post-secondary training, even given the structural shift toward services and the rise in demand for educated workers in Canada, there was no parallel increase in the earnings premium in Canada, at least since the late 1980s. The earnings premium between those with graduate training and those who did not advance beyond high school fluctuated over the course of the business cycle, but remained relatively stable in the range between 2.2 percent and 2.4 percent from the late 1980s through most of the 1990s (see Table 32). Scholars are debating the causes of a widening educational earning gap in the United States and other industrialized countries, and the reasons for a relatively stable earning premium to higher education in Canada. Murphy, Riddell and Romer believe that policies that facilitated substantial growth in post-secondary education during the past two decades in Canada may have had a major effect on wage inequality.[25] They conclude that, absent this expansion of educational attainment, Canada would have experienced an increase in income inequality between the more- and less-educated similar to that observed in the United States.

The evidence presented above shows that, overall, services are more knowledge-intensive than other sectors and, therefore, employ proportionately many more well-educated workers than other industries. However, the quality of jobs in services is especially diverse in terms of earnings, encompassing many of the highest-paid jobs in the economy and some of the lowest-paid. Thus, the employment shift toward services does not necessarily represent a shift from "good" to "bad" jobs, nor does it signal deterioration in overall job quality in Canada.

Conclusions

Canada has experienced significant shifts in the structure of Canada's services trade. Services that are associated with ongoing social, economic and technological changes, and are involved in the production and distribution of knowledge-intensive products, registered rapid growth in both cross-border trade and affiliate sales. These services typically include business, financial and entertainment services, as well as services that are complementary to merchandise trade such as wholesale and transportation services. The expansion of both cross-border exports and sales of knowledge-intensive services by Canadian affiliates is an integral part to the structural adjustment toward a knowledge-based services economy.

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[25] Murphy, Kevin M., W. Craig Riddell and Paul M. Romer (1998). "Wages, skill and technology in the United States and Canada," NBER Working Paper 6638.

Trade economists have always argued that, although trade is not expected to have a permanent impact on the level of employment over the long run—ultimately, it is the macroeconomic policy rather than trade policy that has been responsible for maintaining full employment—it would likely have a strong influence on the structure of output and employment. Increased trade in knowledge-intensive services would result in faster growth of output and employment in these sectors, contributing positively to the development of Canada's specialization in knowledge-based services industries.

Services are overall more knowledge-intensive than any other sectors; therefore, employing many more well-educated knowledge-workers than any other sectors. Service industries encompass many of the best jobs in Canada. The key to maintaining and improving Canada's standard of living is to encourage the development of Canada's specialization in knowledge-based services, generating many high-paid and high-quality jobs in Canada. Liberalizing services trade and investment is an important vehicle to achieve this end.

Nevertheless, despite the continuing expansion of international trade and investment in services, relative to the size of total domestic services, trade in services is still disproportionately small. A large proportion of services activity is still confined to a national boundary and home ownership. Even in some knowledge-intensive services sectors that registered fast trade growth in recent years; their trade performance could not match that of manufacturing. This suggests that plenty of room remains for a further expansion of trade and investment in Canada's knowledge-intensive business services.

Statistical Appendix

Table A1. Canada's Cross-Border Services Trade: Domestic Exports and Imports, 1986-1997 (C$ millions)

	Exports			Imports		
	1986	1997	Growth	1986	1997	Growth
Business services	2,243	9,737	14.3	3,912	9,759	8.7
Computer & related services	234	1,931	21.2	182	1,353	20.0
Accounting & legal services	60	358	17.6	84	523	18.1
Arch., eng., & sci. services	1,151	4,834	13.9	2,266	4,364	6.1
Advertising services	46	252	16.7	242	489	6.6
Miscellaneous business serv.	752	2,362	11.0	1,138	3,030	9.3
Finance, ins. & real estate	2,770	6,710	8.4	3,753	8,525	7.7
Banks, & other deposit-takers	1,227	2,130	5.1	595	1,820	10.7
Other finance industries	389	1,056	9.5	1,773	2,119	1.6
Insurance	1,061	3,057	10.1	1,303	4,371	11.6
Real estate	93	467	15.8	82	215	9.2
Real estate operator	24	30	2.0	52	20	-8.3
Real estate & insurance agent	69	437	18.3	30	195	18.5
Communications	949	2,169	7.8	889	2,804	11.0
Radio & TV broadcasting	20	71	12.2	46	370	20.9
Cable TV	16	22	2.9	11	229	31.8
Telecommunication carriers	716	1,430	6.5	732	1,642	7.6
Postal & courier service	197	646	11.4	100	563	17.0
Amusement & recreation	736	2,918	13.3	945	2,726	10.1
Motion picture, audio & video	197	1,548	20.6	267	1,051	13.3
Motion picture exhibition	2	5	8.7	1	4	13.4
Theatre, sports & others	537	1,350	8.7	677	1,657	8.5
Lotteries, bingos, casinos etc.	0	15	n/a	0	14	n/a
Education and health	292	780	9.3	447	1,055	8.1
Education services	183	592	11.3	263	681	9.0
Education services, private	24	100	13.9	31	129	13.8
Non-profit education	0	107	n/a	0	90	n/a
University education	83	240	10.1	131	274	6.9
Other educational services	76	145	6.0	101	188	5.8
Health & social services	109	188	5.1	184	374	6.7
Health practitioners & labs	n/a	n/a	n/a	20	44	7.4
Hospitals	n/a	n/a	n/a	164	330	6.6

Transportation	3,483	10,092	10.2	2,684	7,087	9.2
Air transport	1,132	2,460	7.3	1,302	3,337	8.9
Railway transport	228	307	2.7	229	284	2.0
Water transport	613	1,602	9.1	302	518	5.0
Truck transport	557	2,737	15.6	208	1,757	21.4
Pipeline	760	2,612	11.9	329	494	3.8
Natural gas	557	1,934	12.0	241	366	3.9
Crude oil & other	203	678	11.6	88	128	3.5
Other transport	193	374	6.2	314	697	7.5
Urban transit system	39	83	7.1	78	166	7.1
Interurban & rural transit	83	136	4.6	90	162	5.5
Taxicab & other transport	45	90	6.5	135	325	8.3
School & other bus	9	33	12.5	11	44	13.4
Other transport services	17	32	5.9	n/a	n/a	n/a
Travel-related services	3,404	6,780	6.5	3,840	9,560	8.6
Accommodation services	1,659	2,622	4.2	2,255	5,196	7.9
Food & beverage services	1,189	2,914	8.5	1,067	2,904	9.5
Auto & machinery leasing	226	336	3.7	199	359	5.5
Travel services	124	337	9.5	28	71	8.8
Parking & other services	206	571	9.7	291	1,030	12.2
Distribution	3,896	11,240	10.1	1,405	2,838	6.6
Wholesale trade	3,758	10,560	9.8	1,220	2,382	6.3
Wholesale margins	n/a	n/a	n/a	n/a	n/a	n/a
Retail trade	138	680	15.6	185	456	8.5
Miscellaneous services	6,725	11,486	5.0	609	1,247	6.7
Transportation margins	5,843	9,735	4.8	n/a	n/a	n/a
Storage	324	541	4.8	2	12	17.7
Grain elevator	319	521	4.6	0	1	n/a
Business membership assoc.	46	74	4.4	46	66	3.3
Other non-commercial	76	117	4.0	80	122	3.9
Sports & recreation clubs	10	23	7.9	11	22	6.5
Other non-profit organizations	66	94	3.3	69	100	3.4
Government services	421	905	7.2	471	964	6.7
Defence	8	36	14.7	11	44	13.4
Other municipal government	145	337	8.0	180	420	8.0
Other provincial government	124	245	6.4	146	260	5.4
Other federal government	144	287	6.5	134	240	5.4
Total services	24,498	61,912	8.8	18,484	45,601	8.6

Source: Statistics Canada, Input-Output Division.

Table A2. Sales of Services to U.S. Persons by Non-bank Majority-owned U.S. Affiliates of Canadian Companies 1989-1998 (C$ millions)

	1989		1998
Business services	394	Business services	1170
Computer & data processing	173	Computer & data processing	590
		Information & data processing	12
		Computer-systems design	578
Accounting, research, management, & related services	18	Accounting, research, management & related services	206
		Accounting & taxation	0
		Manage., sci. & tech.	7
		Legal	0
		Scientific R&D	199
Eng., architectural, & surveying services	197	Eng., architectural, & surveying services	265
		Arch. & eng. services	215
		Other professional serv.	50
Advertising	7	Advertising & related serv.	108
Finance, except banking	230	Finance (excl deposit-takers)	4486
		Non-deposit credit unions	1692
		Securities & investment	2794
Insurance	10,479	Insurance	15406
Real estate	4,930	Real estate	3528
Communications	44.3(1)	Communications	4489
Amusement & recreation	(D)	Amusement & recreation	(D)
Motion pictures	551.9(1)	Motion pictures	5631(4)
		Arts, entertainment & rec.	841
Education and health	(D)	Education and health	(D)
Education services	(D)	Education services	3
Health services	578.7(1)	Health services	1370(3)
Transport & warehouse	1703.8(2)	Transport & warehouse	7892
		Air transportation	0
		Rail transportation	2633
		Water transportation	113
		Truck transportation	219
		Support activities for trans.	128

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Travel-related services	(D)	Travel-related services	(D)
Hotels & other lodging	123	Hotels & other lodging	257
Food & beverage	(D)	Food & beverage	(D)
Equipment rent & lease	(D)	Equipment rent & lease	212
		Travel arrangement & reservations	21
Distribution	491	Distribution	175.9
Wholesale trade	199	Wholesale trade	150.9(4)
Retail trade	292	Retail trade	25
Memo: services component in other sectors		*Memo: services component in other sectors*	
Agric., forestry & fishing	6	Agric., forestry & fishing	30
Mining	24	Mining	58
Manufacturing	(D)	Manufacturing	872
Public utilities	(D)	Public utilities	3252
Construction	(D)	Construction	47
Total services	**22,351**	**Total services**	**62,099**

Source: The U.S. Department of Commerce, the Bureau of Economic Analysis.

(1) Supplemented by 1990 figures

(2) Supplemented by 1993 figures

(3) Supplemented by 1996 figures

(4) Supplemented by 1997 figures

(D) Suppressed to avoid disclosure of data of individual companies.

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Food & beverage	(D)	Food & beverage	(D)
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(4) Supplemented by 1997 figures

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Table A3. Sales by Canadian Affiliates of Foreign Firms in Canada 1988-1997 C$ millions)

	1988		1997		
	Revenue	Industrial share (%)	Revenue	Industrial share (%)	Annual Growth (%)
Business services	5,118	22.6	8,511	17.1	5.8
Computer & related	(D)	N/a	(D)	n/a	n/a
Architectural services	0	0.0	(D)	n/a	n/a
Advertising	(D)	N/a	(D)	n/a	n/a
Account. & management	684	11.6	2,113	12.4	13.4
Offices of eng.	321	7.7	1,204	14.5	15.8
Finance & insurance	29,067	23.8	43,990	25.7	4.7
Chartered banks	3,581	10.2	4,058	6.8	1.4
Trust companies	(D)	N/a	(D)	n/a	n/a
Other deposit-takers	(D)	N/a	0	0.0	n/a
Financial leasing	(D)	N/a	237	21.6	n/a
Other financing inst.	3,455	54.2	7,853	63.2	9.6
Other mortgage inst.	(D)	N/a	84	3.0	n/a
Life insurers	7,620	28.8	9,875	27.7	2.9
Property & casualty	9,064	62.0	14,965	59.3	5.7
Insurance agents	348	11.4	637	8.1	6.9
Deposit & health insurers	0	N/a	(D)	n/a	n/a
Investment dealers	(D)	N/a	(D)	n/a	n/a
Brokerage & others	596	13.0	1,054	16.2	6.5
Real estate	1,681	8.0	2,586	11.9	4.9
Communication & utilities	2,525	5.2	8,650	10.4	14.7
Entert., rec. & amusement	1,074	8.8	3,089	11.9	12.5
Educational services	54	9.9	99	6.4	7.0
Health & social services	71	1.4	154	1.3	9.0
Transportation & storage	1,248	4.4	7,383	17.1	21.8
Air transport	195	2.4	627	4.6	13.9
Railway transport	(D)	n/a	(D)	n/a	n/a
Water transport	229	6.6	679	13.0	12.8
Urban transit	(D)	n/a	335	9.4	n/a
Storage & warehousing	(D)	N/a	(D)	n/a	n/a
Pipeline	234	4.9	184	1.6	-2.6

Travel-related services	2,839	11.6	7,155	18.5	10.8
Accommodation food/bev.	2,081	9.5	4,483	13.9	8.9
Accommodation	492	8.7	1,011	12.4	8.3
Food & beverage	1,589	9.8	3,472	14.5	9.1
Motor renting & leasing	758	29.5	2,672	40.5	15.0
Distribution	43,864	16.6	81,556	23.1	7.1
Wholesale trade	26,590	20.3	58,875	32.8	9.2
Retail trade	17,274	13.0	22,681	13.1	3.1
Other services	604	12.5	1,048	17.1	6.3
Other consumer services	531	15.7	771	16.6	4.2
Building operations	73	5.2	277	10.5	15.9
Total services	88,144	17.5	126,666	17.7	4.1
Memo: affiliate sales in other sectors					
Agriculture & fishing	184	2.0	1529	6.2	26.5
Logging & forestry	129	3.4	170	1.9	3.1
Mining	11,650	50.6	23,619	49.8	8.2
Manufacturing	66,602	39.8	111,987	42.7	5.9
Construction	3,589	4.9	6,434	8.0	6.7
Total affiliate sales all industries	295,620	25.7	518,922	31.0	6.5

Source: Statistics Canada

Travel-related services	2,839	11.6	7,155	18.5	10.8
Accommodation food/bev.	2,081	9.5	4,483	13.9	8.9
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